Office Supreme Court U.S.
FILED
DEC 8 1961
JOHN F. DAVIS, CLERK

Nos. ~~5-91-22605~~

4 - 7 - 2

IN THE

United States Court of Appeals

FOR THE FIFTH CIRCUIT

No. 18,547

TENNESSEE GAS TRANSMISSION COMPANY

v.

FEDERAL POWER COMMISSION

No. 18,597

THE MANUFACTURERS LIGHT AND HEAT COMPANY, ET AL.

v.

FEDERAL POWER COMMISSION

On Petition to Review Orders of the Federal Power Commission

JOINT APPENDIX

Volume I

EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS

(Record Pages 109-1622)
(Joint Appendix Pages 1-381)

INDEX

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS	109-1622	I	1-381
Witnesses:			
L. E. Katzenbach	150-456	I	29-54
	783-957	I	110-147
	1445-1483	I	315-335
	1484-1614	I	335-376
Ross M. Robertson	1319-1347	I	308-315
Prepared Testimony	1302-1318	I	296-308
Felix I. Shaffner	978-980	I	147-148
	1018-1199	I	178-288
Prepared Testimony	981-1017	I	148-178
Gardiner Symonds	109-144	I	2-28
	597-774	I	54-110
Louis Zanoff	1202-1241	I	289-295
HEARING EXHIBITS	1818-2358	II	383-496
No. 4-A: Schedule A—Rate Base and Return (Revised)	1818	II	383
No. 11:			
Schedule A—Moody's Average of Yields on Public Utility Bonds:			
Rating Aaa	2210	II	385
Rating Aa	2211	II	386
Rating A	2212	II	387
Rating Baa	2213	II	388
Schedule B—Tabulation of Moody's Average Rate on "A" Rated Public Utility Bonds for the Month of Issue and Yields to Maturity of First Mortgage Pipe Line Bonds	2214	II	389

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
Schedule C—Cost of Long-Term Debt Capital at Dates of Rate Cases	2215	II	390
Schedule D—Cost of Preferred Stock Capital at Dates of Rate Cases	2216	II	391
Schedule E—Month-End Bank Balances 12-Months Ended July 31, 1959	2217	II	392
No. 13: Rate of Return Study—Gardiner Symonds	2222-2244	II	393-412
No. 14: Rate of Return Study	2246-2250	II	413-417
No. 18: Speech by Gardiner Symonds of Tennessee Gas Transmission Company, delivered on February 10, 1960	2259-2274	II	419-436
No. 19: Page 867, Value Line Investment Survey—March 21, 1960	2275	II	437
No. 20: Selected Common Stock Price-Index, 1943-1959	2276-2277	II	439-440
No. 21: Cost of Capital and Rate of Return Study, March, 1960	2280-2318	II	441-474
No. 22: Tabulation "Return Earned on Average Book Value of the Common Shares, 10 Natural Gas Pipe Line Companies"	2319	II	475
No. 23: Company Earnings Price Ratios, 1950-1959, Tennessee Gas Transmission Company	2320	II	476
No. 25: Comparison of Minimum Bill Revenues With Total Revenues from Jurisdictional Pipeline Sales and Transportation of Natural Gas Under Tariff Rate Schedules	2323-2327	II	477-481
No. 27: Yields of Preferred Stock Issues by Tennessee Gas Transmission Company	2332	II	482

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
No. 30: Tennessee Gas Transmission Company Common Stock Prices, Per Cent Increase from Year Shown to December, 1959	2345	II	483
No. 31: Tennessee Gas Transmission Company Capitalization, Consolidated February 29, 1960	2346-2347	II	484-485
No. 32: Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of February 29, 1960	2348-2350	II	486-488
No. 33: Tennessee Gas Transmission Company Capitalization—Non-Consolidated February 29, 1960	2351-2352	II	489-490
No. 34: Tennessee Gas Transmission Company Capitalization—Non-Consolidated March 31, 1960	2353-2354	II	491-492
No. 35: Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of March 31, 1960	2355-2357	II	493-495
No. 36: Common Stock Prices Per Cent Increase from Year Shown to December, 1959	2358	II	496
PLEADINGS	4383-5595	II	497-626
Tennessee Data Supporting Revised Tariff, filed October 5, 1959	4383-4410	II	497-501
Order Suspending Proposed Tariff and Other Revised Tariff Sheets and Providing for Hearing, issued November 4, 1959	4736-4738	II	502-505
Order Making Effective Proposed Tariff Changes Upon Filing of Undertaking to Assure Refund of Excess Charges, issued April 29, 1960	5189-5192	II	505-509
Tennessee's Agreement and Undertaking, received May 6, 1960	5202-5204	II	510-512

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
Order Adopting Interim Order Procedure Omitting Intermediate Decision and Fixing Rate for Oral Argument, issued June 17, 1960	5278-5280	II	513-516
Order Denying Motions, issued July 1, 1960	5297-5298	II	516-518
Motion To Omit Intermediate Decision Procedure on Issue of Cost Allocation, received July 19, 1960	5316-5318	II	519-521
Order Denying Motions, issued August 5, 1960	5370-5371	II	522-523
Order Determining Rate of Return Disallowing Proposed Increased Rates and Directing Payment of Refunds and Permitting Substitution of Lower Interim Rates, issued August 9, 1960	5372-5382	II	524-540
Application of Tennessee Gas Transmission Company for Rehearing of Order Issued August 9, 1960	5420-5457	II	541-576a
Joint Application and Petition for Rehearing on Behalf of the Manufacturers Light and Heat Company, the Ohio Fuel Gas Company, and United Fuel Gas Company So That the Commission Will Reconsider and Modify Its Order Issued August 9, 1960, Insofar As It Pertains to Interim Refunds	5470-5477	II	577-584
Order Denying Applications for Rehearing, issued September 27, 1960	5491-5494	II	585-591
Memorandum of Tennessee Gas Transmission Company in Opposition to Staff Motion for Interim Order, received June 13, 1960	5551-5566	II	591-606
Memorandum, Answer and Objections of the Manufacturers Light and Heat Company, the Ohio Fuel Gas Company and United Fuel Gas Company to the Motion of Staff Counsel for Interim Refund Order	5577-5595	II	609-626

	Original	Print
Proceedings in the United State Court of Appeals for the Fifth Circuit	626a	627
Transcript of hearing of October 19, 1960	626a	627
Appearances	626b	627
Colloquy between Court and counsel for respondent	626c	628
Per Curiam order of the court denying stay pending review	630	632
Judge Wisdom dissenting	631	633
Order denying rehearing on motions for stay	668	634
Minute entry of argument and submission	670	634
Chief Judge Tuttle Opinion, approving rate of return	671	635
Per curiam, setting aside in part the order of the Commission	684	643
Chief Judge Tuttle, dissenting in part	684	644
Judgment	689	647
Order denying petition for rehearing	690	648
Order staying mandate	691	648
Order further staying mandate	694	649
Answer and objections of New England Zone Companies to Tennessee Gas Transmission Company's motion to omit intermediate decision procedure on issue of cost allocation filed before the Federal Power Commission	696	650
Cross-motion to expedite and answer motion to omit intermediate decision procedure on issue of cost allocation filed before the Federal Power Commission	713	655
Clerk's certificate (omitted in printing)	785	660
Orders allowing certiorari	786	660

IN THE

United States Court of Appeals

FOR THE FIFTH CIRCUIT

No. 18,547

TENNESSEE GAS TRANSMISSION COMPANY

v.

FEDERAL POWER COMMISSION

No. 18,597

THE MANUFACTURERS LIGHT AND HEAT COMPANY, ET AL.

v.

FEDERAL POWER COMMISSION

On Petition to Review Orders of the Federal Power Commission

JOINT APPENDIX

Volume I

EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS

109

Gardiner Symonds

By Mr. Littman:

Q. Please state your name, residence and position with Tennessee Gas Transmission Company. A. My name is Gardiner Symonds, and I reside in Houston, Texas. I am Chairman of the Board and President of Tennessee Gas Transmission Company and am the Chief Executive Officer of that company.

Q. Please state your educational background and experience. A. I was graduated from Leland Stanford University in 1924, with a degree in Geology.

I worked for the Corn Exchange National Bank, Merchants Loan and Trust, and Illinois Merchants Trust Company, for approximately a year;

I then went to the Harvard Graduate School of Business Administration, receiving my degree there in February 1927.

I returned to the Illinois Merchants Trust Company, which subsequently became the Continental Illinois National Bank and Trust Company of Chicago, and was assigned by that company to its affiliate, The Chicago Corporation. I worked in successive positions of clerk, statistician, investigator, analyst, junior officer, officer, and, later, director. I served on a number of boards of directors as a nominee of that company.

In September 1943, I was made President and Director of Tennessee Gas Transmission Company, and in June 1958 I was

110

elected Chairman of the Board and have since served in those capacities. At the present time I am a member of

the board of directors of several corporations including the National Bank of Commerce of Houston, Texas.

Q. Have you, as Chief Executive Officer of Tennessee Gas Transmission Company, had the principal responsibility for the sale of its securities to raise necessary capital funds? A. Yes, I have.

Q. Please describe in a general way Tennessee's growth, what Tennessee's capital requirements have been, and how such capital funds have been raised. A. At December 31, 1945 after the first full year of operation, Tennessee's plant investment amounted to some $65 million. The funds for this investment were provided through the issuance of some $50 million of long term debt, $7.5 million of preferred stock, and a like amount of common stock. Since that date Tennessee's growth has been rapid, its total capital now being some $1.2 billion.

This growth has required the successful issuance and sale of large amounts of securities by Tennessee. For example, long term debt outstanding as of December 31, 1959 was approximately $700 million as compared with $50 million in 1945. The long term debt issued during this period actually exceeded this net increase because of refunding issues in 1946 and in 1954, and the reduction resulting from sinking fund operations.

111

Without going into details now I might say also that there have been relatively large amounts of capital funds provided from preferred and common stock sales over this period.

Q. Do you anticipate a continuation of the growth of Tennessee? A. Yes, Tennessee's growth will continue. It has always been our policy to meet the increasing natural gas requirements of our customers and there is no indication at the present time that there is to be any slacken-

ing in demand for gas. Thus last year Tennessee put some $140 million of pipeline facilities into service.

Q. Does such growth have any relationship to rate of return? A. Yes. In the most simple terms, growth of this magnitude requires substantial outside capital funds, inasmuch as funds generated internally cannot possibly do the job. Obviously the ability to successfully finance expansion programs depends on the adequacy of earnings. In this connection historical experience as to earnings is a very important factor since it forms a basis for judging the future.

Q. Do you consider the 6% rate of return which has previously been allowed Tennessee by the Federal Power Commission in its rate cases to have been adequate? A. Until rather recent years, yes, the 6% rate of return has provided adequate earnings in that it has enabled

112

Tennessee to finance facility additions, and maintain the integrity of its investment by providing a reasonable return to the common stockholder. The records of the Commission will show that Tennessee sought only a 6% return in all of its rate increase proceedings until 1957 when increased cost of debt capital forced us to seek a higher rate of return in our filing in Docket G-11980.

Q. Is 6% adequate at the present time? A. No. At the present time, a 6% return is wholly and completely inadequate, outmoded and unrealistic.

Q. What rate of return is Tennessee claiming in this case and how does such rate of return compare with returns claimed in the two rate filings immediately prior to this one? A. Tennessee is claiming a 7% rate of return in this filing. In Docket No. G-11980, filed with the Commission over 3 years ago, we claimed a return of 6.6% and in Docket No. G-17166 filed back in November 1958 we included a 6.8% rate of return in our cost of service.

Q. Will a 7% rate of return under present and foreseeable conditions provide a higher rate of earnings on the common equity than that experienced historically under the 6% return level? A. No. Obviously a 7% return would produce more total dollars than a 6% return, but because of the increase in the

cost of Tennessee's debt capital, a 7% rate of return for Tennessee will not produce higher earnings on the equity than the 6% did in the past. In other words, 7% today is comparable to the 6% of a few years ago.

Q. What has been Tennessee's experience with respect to recent issues of long term debt? A. Tennessee has issued several series of bonds and debentures since 1956 and in each case the cost exceeded 5 per cent. Tennessee issued $50 million principal amount of 5¼% series of first mortgage bonds on June 5, 1957 at a cost to the company of 5.43%. Following that was an issue of $25 million of 6% debentures on July 31, 1957 at an annual cost to the company of 6.33%. On April 23, 1958 $30 million principal amount of 5% debentures was issued, the cost of which was 5.20%. Next a $50 million bond issue with a 5⅜% coupon was sold on September 23, 1958 which cost the company 5.54%. Finally on July 29, 1959 another $50 million bond issue with a 5¼% coupon was sold, the cost being 5.27%. In other words, the range in the cost of senior money during the past three years has been between 5.20% and 6.33%, and the average cost of this $205 million of debt capital was 5.49%.

Q. Do you anticipate that interest rates, and consequently the cost of long-term debt capital, will decline in the foreseeable future? A. No. I do not expect that there will be any material

decline in prevailing interest rates in the near future. There are a number of reasons for my view. In the first place the policy of our Federal government is toward hard money for the ostensible purpose of putting a brake on inflation. Secondly, Congress will probably have to lift, or raise the 4¼% legal limit on government obligations with a maturity of more than five years, which limitation, I understand, was imposed in 1918. As is well known, the Treasury made a serious effort to lift that ceiling during the last session of Congress without success. Under the circumstances the Federal government has been compelled to go into the short term market for funds with the result that a greater portion of government debt is of short term character. Thus in August 1959 the Treasury issued $2 billion of notes, maturing in 4 years 10 months at a cost of 5 per cent. When the interest ceiling is raised the government will undoubtedly go back into the long term market in order to obtain a better balance between long and short term debt.

Furthermore, now that the steel strike has been settled there is a resumption of construction and plant expansion, and capital will be required for these purposes.

Q. At what rate of interest would Tennessee have to be able to issue debt securities in order not to increase the present imbedded or historical cost of its debt capital?
A. Until Tennessee can issue new long term debt at a

cost lower than the present historical cost of 4¼% there can be no lowering of Tennessee's average cost of debt capital. This would require a drop of 20% or more in current interest rates, a development which is completely unrealistic. The only sound conclusion is that the imbedded cost of money to Tennessee will increase above the present level.

Q. Please outline what capital funds have been obtained from the issuance of preferred and common stocks during recent years. A. Tennessee has not issued any first preferred stock since June, 1955.

There have been five issues of second preferred stock each convertible into common stock. The first such issue was sold in February, 1956 and the most recent in November, 1959 when $29,517,800 par value of 5.00% series convertible second preferred was issued. The total par value of second preferred stock issued prior to November, 1959 was some $136 million, of which over $65 million had been converted into common stock as of October 31, 1959. There were 2,281,573 shares of common stock issued in connection with these conversions representing an average investment of $28.55 per share of common stock.

In February, 1958 Tennessee sold 1,000,000 shares of common stock, the gross proceeds being $30.35 per share, the net proceeds to the company being approximately $29 per share.

If we add the common stock issued on conversion of

second preferred stock to this sale of common we have a total of 3,281,573 shares issued with total proceeds to the company of some $94 million or $28.68 per share. As of November 27, 1959, there were 101,394 holders of Tennessee's common stock who owned 23,305,807 shares.

Q. You have stated that there have been five issues of convertible second preferred stock. Please outline the status of each issue as to its conversion into common stock.

Q. As of October 31, 1959 about 34 per cent of the 1956 issue of 4.50% series had been converted into common stock and this issue is continuing to convert at a steady rate. At that date all of the 5.00% series initially issued in 1956 had been converted, some $32 million in amount. Also, all the $20 million 5.16% series issued in 1958 is now con-

verted. There remains the 4.72% series sold in April, 1959 and the new 5.00% series which was sold in November, 1959. If the last issue is excluded about 50% of the total amount of second preferred stock initially issued has already been converted, and including the last issue the amount converted is some 40% of the original total of all five issues.

Q. Mr. Symonds, what is the purpose in issuing convertible preferred stock? A. The real purpose of issuing convertible preferred stock is to increase our common equity through conversion and to achieve economical cost of capital pending conversion. We

feel we have been very successful in this endeavor inasmuch as over $65 million of convertible preferred stock is now a part of our common equity. Moreover, it is an economical way to increase the common equity for convertible preferred stock can sometimes be sold when ordinary preferred stock is not marketable on reasonable terms and conditions. Convertibles invariably sell on a lower dividend basis than straight preferred stock.

To show how purchasers of convertible preferred stock actually pay for the privilege of converting the stock into common, I would like to cite the fact that Tennessee sold its last issue of convertible second preferred stock on November 10, 1959 to yield 5% to the purchaser. On November 18, 1959 the American Telephone and Telegraph Company sold $250 million 5⅜% debentures rated Aa to yield the purchasers approximately 5.20%. The comparison speaks for itself. Accordingly, if all of the convertible second preferred stock is treated as straight preferred stock in computing cost of capital in fixing future rates we would be ignoring plain and demonstrable financial facts. I believe that Tennessee is conservative when it includes in the common equity for the purposes of this

case only the balance of the 4.50% convertible second preferred stock which has not yet converted, but which is being converted at a rather steady pace.

Q. I show you Exhibit 13 for identification entitled

118

"Tennessee Gas Transmission Company, Rate of Return Study—Gardiner Symonds" and ask you whether this exhibit was prepared under your direction and supervision? A. Yes, it was.

Q. Please turn to page 1 of the exhibit and explain that page. A. A little earlier I referred to the 6% rate of return allowance as being outmoded and unrealistic. This page has been prepared in further illustration of this conclusion.

The upper section of the page shows Tennessee's capitalization as of July 31, 1959, with the balance of the 4.50% convertible second preferred included in equity.

To this capitalization is applied the cost of capital for all classes except common equity. A six per cent overall rate of return is applied and the resulting return on common equity is derived. This return on equity is then applied to the capitalization as of September 30, 1946, with the cost of debt and preferred stock computed at their respective actual cost. The result is that a return of 6% today is equivalent to an overall return allowance of only 4.97% to Tennessee in 1946. It will be recalled that the Federal Power Commission had considered 6½% as a reasonable return until just a short time prior to 1946. It is obvious that Tennessee and the natural gas industry would not have grown, but would have become stagnant under any such penurious and unreasonable rate

119

of return as 4.97%.

Incidentally, for this comparison I selected the Septem-

ber, 1946 capitalization because the equity ratio then of 27.75% is comparable to the equity ratio at July 31, 1959 of 26.86%.

Q. Please refer to and explain pages 2 and 3 of your exhibit. A. Page 2 is a chart showing the disposition of actual gross income, and the average capitalization, for Tennessee for the year 1950 and for the test period in this case, the 12 months ended July 31, 1959. The chart illustrates the portion of the gross income of the company which was required for interest and preferred stock dividends, and the balance which was available to common equity. As will be noted, the balance available to common equity declined from 61.1% of the total gross income in 1950 to only 43.1% thereof in the rate case test period, even though the common equity portion of total capitalization was slightly more in 1959 than in 1950. This illustrates very clearly the effect which has resulted from the higher cost of senior capital, and how that high cost has put the squeeze on net income available to the equity shareholder.

Page 3 shows the basic figures upon which the diagram is based.

Q. Will you please explain pages 4 and 5 of your exhibit.

120

A. The purpose of the chart on page 4 is to show how much of the gross revenue dollar received by Tennessee is required for each of the major cost of service items, and to compare the test period with the year 1950.

The diagram for the year 1950 is based upon actual receipts and expenditures. The chart for the 12 months ending July 31, 1959 reflects the adjusted cost of service as contained in our exhibits in this case. In other words the 1959 gross revenue dollar distribution includes the higher level of revenues shown in the rate filing, which in turn reflects the increased cost of gas as well as the claimed 7% rate of return. In order to develop compar-

able components, it was necessary in 1959 to allocate interest and preferred dividends to the natural gas portion of the company's business. The interest assigned to the natural gas function in this chart was taken from the interest so assigned in our rate filing, and preferred dividend requirements were allocated on the basis of average net plant.

Our purchased gas costs absorbed a much greater part of our gross revenue dollar in 1959 than in 1950. Conversely, other operating expenses required a much smaller part of our receipts. There is no significant change in the portion of the revenue dollar required for depreciation, taxes and interest. The balance available for common stock in 1950 amounted to 20 cents out of every revenue dollar while for the test period

it was 11 cents.

Page 5 contains the data on which the chart on page 4 is based.

Q. Please explain pages 6 and 7 of your exhibit. A. Page 6 of this exhibit shows the extent of changes in 1959 as compared with 1950 in cost of labor, cost of pipe and earnings on Tennessee's common stock equity in 1959 compared to 1950.

The cost of labor represents the average hourly wage for electric and gas utilities as compiled by the United States Department of Commerce. The monthly average for 1950 was $1.60 while the figure for June, 1959 was $2.57 or a 61% increase.

The cost of pipe is based on the mill price per ton paid by Tennessee for 26 inch pipe with 9 32 inch wall thickness. The price was $123.00 per ton in 1950 and was $192.88 per ton in 1959. This represents an increase of 57%.

The rate of earnings on equity on the basis of an over-

(121)

all rate of return of 6% in 1950 would have been 15.54%. On the same 6% return basis the earnings on the equity as of October 31, 1959 would have amounted to only 11.06%, or 7% of the 1950 rate of earnings. On a 7% rate of return basis the earnings on common equity capital as of October 31, 1959 would have been 15.10% or 97% of the 1950 rate of earnings. In computing earnings on equity the actual capitalizations

122

as of December 31, 1950 and October 31, 1959 were employed in order to base the comparison on comparable equity ratios. The equity ratio was 22.27% in 1950 and 24.77% as of October 31, 1959. Solely for the purpose of this comparison, and in order to keep the equity ratios reasonably uniform, the 4.5% second convertible preferred stock was not included in common equity in these calculations. This illustrates that the earnings on equity at a 7% overall return in 1959 is equivalent to a 6% return in 1950 with no consideration given to the factor of inflation.

Page 7 contains the date underlying the chart on page 6.

Q. Will you please explain pages 8 and 9 of your exhibit. A. Page 8 is a chart showing on an index basis, the changes experienced from 1950 to 1959 in cost of gas and cost of capital.

The cost of gas bar is based on the adjusted cost of purchased gas contained in the cost of service in this case as compared with the cost in 1950. In 1950 the average cost of all gas purchased was 5.16 cents per Mcf. The adjusted cost in this proceeding is 18.24 cents, or a 253% increase.

The cost of capital bars on this chart are based on the months of September 1950 and July 1959. In each of these months Tennessee sold a first mortgage pipe line

bond issue. For comparative purposes therefore the capital cost bar showing

123

the change in yield on Moody's A rated public utility bonds is based on the months of September 1950 and July 1959. In September 1950 the yield on Moody's A rated public utility bonds averaged 2.80%, while in July 1959 the yield had increased to 4.88%. This is an increase of 74% above the 1959 level.

The cost to the company on the September 1950 bond issue was 2.94%. Nine years later a similar issue of first mortgage bonds was sold at a cost to the company of 5.27%. In this instance the cost increased 79% or more than the increase in the yield on Moody's A rated utility bonds. In fact, in recent years each of Tennessee's bond issues has been sold at a cost to the company materially in excess of the then current yield on Moody's A rate utility bonds.

For comparative purposes this chart repeats the change in earnings on equity. Page 9 contains the data underlying the chart on page 8.

Q. Please explain pages 10 and 11 of your exhibit. A. The purpose of the chart on page 10 is to show how the rate payer would realize a reduction in the cost of service whenever the cost of debt capital increases and a static rate of return is employed. It further shows the adverse effect on the common stockholder under such circumstances.

In order to simplify the presentation, the study is based on certain assumptions which, however, are realistic and

124

valid. The study is based upon a $1 million rate base, a 63% debt ratio, and income taxes at 53½% of taxable income. The size of the rate base has no effect on the results portrayed. The 63% debt ratio is approximately the historical average for Tennessee, and represents substan-

tially the present situation. State income taxes are generally about 3% of the Federal amount so that the two together represent about 53½% of taxable income, which is the figure used in the preparation of this chart.

The first bar on the chart on page 10 is based on a cost of debt of 2.59% which was the actual cost at the time of our first rate case in Docket G-606 when Tennessee was allowed a 6% return. The second section of the chart reflects a debt cost of 4.22% which was the historical, or embedded cost of debt capital to Tennessee as of July 31, 1959. The right hand part of the chart shows the changes which would occur with cost of debt at 5.27%, the cost of Tennessee's last debt issue.

The chart illustrates the inequitable situation which develops when the overall rate of return is frozen during a period of material increases in the cost of debt capital. The result is brought about by the fact that interest expense is not included as a part of the cost of service in determining rates, but is a proper deduction in the determination of taxable income. This means that when the interest cost rises a reduction in income taxes occurs under a static rate of return.

125

The result is a reduction in the cost of service.

The chart shows that with cost of debt at 2.59% the cost to the rate payer for return, $60,000, and income taxes, $50,259, would amount to $110,259. With debt cost at 4.22% the cost to the rate payer would be $60,000 for return, but only $38,445 for income taxes, or a total of $98,445. Thus the cost of service would be reduced by $11,814. On the other hand, interest cost would be increased from $16,317 to $26,586, or $10,269. Under a static rate of return the stockholder would pay the increased interest of $10,269, but the rate payer would get the $11,814 reduction in income taxes resulting therefrom.

The third section of this diagram illustrates the further effect which can be anticipated as historical debt cost approaches the current cost of debt capital. In this instance, as compared with the initial situation, we find that interest cost would increase from $16,317 to $33,201, or a difference of $16,884. The total cost of return and income taxes to the rate payer would drop from $110,259 to $90,833 or a reduction of $19,426. Here again the cost of capital used for providing the service would increase $16,884 which increase would be borne by the stockholders with a concomitant benefit to the rate payer of $19,426.

Page 11 contains the underlying data for the chart on page 10.

126

Q. What in your opinion must be done to avoid the inequitable results which you have just described? A. The very minimum which must be done in my opinion is to raise the rate of return sufficiently to offset the full increase in cost of debt capital.

Q. Do pages 12 and 13 demonstrate the adjustments in rate of return which you consider necessary to avoid inequitable results? A. Yes. They show the minimum adjustments which would be necessary.

Q. Please explain pages 12 and 13 of your exhibit. A. The chart on page 12 was based on the same premises as the chart on page 10. The difference is that instead of holding the rate of return to 6% the chart shows the effect of increasing the cost to the rate payer by no more than the increase in cost of debt capital.

As will be observed the left hand bar is identical to the first bar on the chart on page 10. Moving over to the second bar, the net to stockholders is maintained at the $43,683 figure. Interest is included at the 4.22% rate in the amount of $26,586. The resulting income tax would be $50,259, the same as that in the first bar, since the increase

in interest is deductible for tax purposes. The total cost therefore in the two illustrations on page 12 would increase from $110,259 to $120,528 or $10,269.

127

Inasmuch as net income to the stockholders and income taxes would not change in the illustration the sole cause for t .. increase shown is the increase in interest expense. Still looking at the second bar the net income for stockholders and interest expense aggregate $70,269 which is 7.02% of the $1 million rate base. This is the very minimum rate required to save the stockholder whole, under the circumstances described. This would not provide any increase to the stockholder, but would merely cover the increased interest expense on the debt capital. An increase in interest expense is just as real and as valid as an increase in the cost of labor, the cost of gas, or any other item involved in the cost of doing business. It must be allowed for in the rate of return if the integrity of the invested capital is to be maintained, and the company kept in a position to attract the additional capital necessary to do a competent job in the public interest.

Page 13 contains the data underlying the chart on page 12.

Q. Have you made a study showing the return on common equity which resulted from the 6% overall return allowed by the Commission in the five Tennessee rate cases which have been concluded as compared with that resulting from the 7% overall return claimed in this case? A. Yes, I have. That study is reflected on page 14 of my exhibit.

128

Q. Will you please explain page 14. A. Page 14 shows Tennessee's capital ratios at certain balance sheet dates; that is to say, according to the balance sheets which were available immediately preceding the institution of the first

rate case by the Commission in Docket No. G-606 and immediately preceding the rate filings in the next four Tennessee rate cases.

The costs of long term debt and preferred stock are also shown together with the return on equity resulting from the use of an overall return of 6% for the first five rate cases, and 7% in the present case.

To illustrate, September 30, 1946 was the balance sheet date in Docket G-606. It will be seen that the long term debt was 59.11% of total capital, and the long term debt money cost 2.59%. The return on total capital required to service long term debt was therefore 1.53%. Preferred stock amounted to 13.14%, at a cost of 3.86% or, the return on total capital required for preferred was 0.51%. The sum of the return requirements for long term debt, preferred stock and common equity, as shown in Column 4, aggregated 6%. Thus in the first rate case, the 6% overall return gave a yield of 14.27% on a common equity representing 27.75% of total capitalization.

The same process is repeated for each of the balance sheet dates shown on page 14 of this exhibit. As of April 30, 1951,

it will be noted that the common equity ratio was 22.64% of total capitalization and the return was 15.42% on the basis of an overall return of 6%.

As of June 30, 1952, common equity was 20.12% and return was 15.85%; as of June 30, 1953, common equity was 21.94% and the return was 14.49%.

Similarly, the return as of August 31, 1954, on the basis of the 6% overall return was 14.95% on an equity ratio of 19.80%.

In the instant case, Docket G-19983, the 7% return claimed applied to capitalization as of July 31, 1959 produces a return to common equity of 14.3%. I have also

shown the 7% applied to capital outstanding at October 31, 1959 and the return to common equity on that date would be 14.18%. For the two dates in 1959 I have included the balance of the 4.50% convertible second preferred stock as common equity. There was no convertible second preferred stock outstanding as of the other balance sheet dates shown on page 14.

It will be noted from page 14 that the returns allowed or claimed on common equity in our rate cases through 1954 show substantial uniformity. It was on the basis of these allowances that Tennessee has been able to maintain its financial integrity and to obtain the capital required for its very substantial expansion programs.

Q. Mr. Symonds, will you please turn to pages 15, 16 and

17 of your exhibit which are related to each other and explain the data shown thereon. A. Page 15 contains statistical data relative to what is known as Moody's 24 Utility Common Stock series. The first three columns show prices, earnings and dividends per share, the figures being taken directly from Moody's Public Utility Manual. The last three columns on page 15 show earnings-price ratios, yields and payouts all computed from the figures in the first three columns.

The tabulation shows that the trend in earnings has been upward since the early 1940's. Likewise, the dividends per share have increased during this period. It will be noted that on an investment in 1942 at the average price of $12.92 per share with earnings of $1.40 per share, the yield in that year would have been 9.76%. The earnings-price ratio then was 10.84%. Ten years later, however, in 1952, the earnings on that investment of $12.92 would have amounted to $2.62, or 20.3%, with a dividend yield on the original investment of 14.8%. While these returns would

appear to be very generous, they do not represent the full story because in the meantime the market price of the stock increased from $12.92 to $35.48 a share, almost 200%.

Likewise an investment in 1945 at the average price of $26.29 per share, when the earnings-price ratio was 6.54% and the yield 4.99%, ten years later would have shown earnings

131

of 12.2% on that investment, a yield of 8.4%, and an increase in the market price of the stock of almost 90%.

132

Similarly, on an investment in 1948 at the average price of $27.34 per share, the earnings on the stock in 1958 would have been 13.3%, the yield of 9.2%, and the increase in market price 119%.

Q. Can any conclusions be drawn from page 15 as to the propriety of determining the return to be allowed on common equity by the use of earnings-price ratios? A. Yes. The earnings-price ratios and yields for 1929 and 1930 were very low. Thus the earnings-price ratio for 1929 was 3.81%. A struct application of the earnings-price ratio theory in fixing allowances for common equity would thus have reflected lower allowances in 1929, which was a very prosperous year until the crash in the late fall, than in the succeeding depression years of the 1930's. This would seem a contradiction of sound ratemaking principles for rates of return are not ordinarily increased in times of depression.

Q. Will you please explain page 16. A. The chart on page 16 shows the price of Moody's 24 Utility Stocks and earnings and dividends thereon in graphic form. It will be noted that beginning in about 1942 or 1943 earnings and dividends increased rather steadily for the entire period. The prices of the stocks, however, moved somewhat

irregularly with these increases until 1953, after which the prices greatly outstripped earnings and dividends.

I would like to call particular attention to the

133

bulge in the line representing prices of stock in the year 1946. That increase in the average price of the stocks resulted in low earnings-price ratios and yields for 1946. The change was brought about solely by the change in the average market price of the stocks, which is often affected by many factors other than current earnings and dividends.

Page 17 shows the companies included in Moody's 24 Utility Stock series.

Q. Will you please turn to pages 18 and 19 and explain those pages? A. Page 18 is a graph based on the data on page 19 and shows the earnings-price ratios of the 27 utilities I have just been discussing, yields on U. S. Treasury Bonds and yields on Moody's Aa Utility Bonds. The data are reduced to an index number basis for comparative purposes with 1943 taken as 100. I have used Moody's Aa Bonds because I believe they are representative of the bonds of the 24 companies whose earnings-price ratios are portrayed on the graph.

It will be noted that the earnings-price ratios dipped in 1945 and 1946 when the market price of the stock increased, then moved along with the other index numbers until about 1950. In 1950 there started an upward movement in the yields on U. S. Treasury Bonds and on Moody's A Bonds and at the same time there began a rather sharp decrease in

134

earnings-price ratios. The divergence between yields on Treasury's and utility bonds on the one hand, and earnings-price ratios on the other, has become very wide in recent years. Thus, the index number for yields on Treasury

Bonds stood at 166 as of October 1959, whereas the last index for earnings-price ratios stood at 76.

The compensation for common stock capital consists of two elements, namely, cost of money, sometimes called the pure cost of money, and reward for risk. The cost of money to the U. S. Government is considered a good indicator of the pure cost of money and the yields on triple A Bonds is also considered a reliable indicator. This pure cost of money has risen very substantially since 1950, hence the pure cost of money element in the cost of common stock capital has necessarily increased. It cannot be said that the risk element has decreased because the 24 utilities included in the Moody's series represent one of the best groups of seasoned utilities in the United States and they were accepted as such before 1950

135

when their earnings-price ratios began to decline. This proves conclusively, I suggest, that the decline in earnings-price ratios cannot be attributed to a decline in cost of capital or in the risk associated with such seasoned investments. The obvious answer is that the decline in earnings-price ratios is associated with the investors' anticipations for the future. I mean by this that investors, looking over the history of these companies, noting the substantial increases in earnings per share over a period of years, as well as the increases in dividends per share and the very substantial increases in the market value of stock, are buying for these anticipated increases and not for the current yields alone.

I would like to point out, also, that the decline in earnings-price ratios as compared with the increase in the cost of debt capital is not defined to public utilities. According to statistics published in the Federal Reserve Bulletin each month, the yield on corporate bonds rated Aa and A by Moody's averaged 4.16% in 1958, whereas the

yields on Standard & Poor's Selected Stocks was 3.97%. This condition of corporate bonds in general reflecting higher yields than common stocks, has continued through 1959. Obviously, when senior debt securities yield more than junior risk capital, investors are looking far beyond the current earnings on the stocks.

It can be shown conclusively what would happen if earnings-price ratios are used directly in determining the

allowance to common equity capital in public utility rate proceedings. Thus, in the case of Tennessee, if an earnings-price ratio of, let us say 8%, which is higher than that reflected by the present market, were applied to the book amount of common equity, the result would be earnings of approximately 96 cents a share. This compares with the current dividend of $1.40 a share. If our earnings on common were cut to 96 cents a share, there would be an immediate and drastic loss in confidence in Tennessee's stock which would result in an increase in the earnings-price ratio. This would justify the company coming back to the Commission for an increase in return. Paradoxically, if the Commission increased the rates to the point where the current dividend could be resumed, the earnings-price ratio would probably go back to where it is today. Thus, under a wide-spread use of a strict application of the earnings-price ratio theory, the data on pages 15 to 18 would be altogether different from what appears thereon.

As further evidence of the fallibility of earnings-price ratios as a measure of investor requirements with respect to common equity I would like to cite figures for two railroad stocks. At the end of 1959 the earnings-price ratio on Pennsylvania Railroad Common was approximately 3.8% and the yield 1.6%. The earnings for the year were estimated at 60 cents a share. But in 1955 and 1956 the earn-

ings were over $3 a share. We well may ask why would investors buy railroad stock at a yield of 1.6% when they can buy Treasury's at a yield of

137

about 5%. The answer is that they do so only on the basis of history and anticipation.

The other example relates to Erie Railroad Company. The stock of that company at the end of 1959 was selling for about $11.50 a share. The company had a deficit in 1958 and a deficit for the first 11 months of 1959, with an estimated deficit for the year of $2.25 per share. Thus, there was a negative earnings-price ratio. Obviously a negative earnings-price ratio is of no assistance in determining the return required by investors in common stock. A strict application of such an earnings-price ratio would show that no allowance should be made for common equity.

These two examples show beyond question that earnings-price ratios are not a valid measure of what investors require in order to make common stock capital available to business institutions.

Q. Please explain page 20 of your exhibit. A. Page 20 shows the cost of capital to Tennessee as of October 31, 1959. One adjustment has been made on the schedule to the capital as shown by our books, namely, the transfer of $26,516,200 of 4.50 percent convertible second preferred stock from the preferred category to common equity capital. As I previously pointed out, the original 4.50% convertible second preferred stock amounted to $40,000,000 of which $13,483,800 was converted as of October 31, 1959, and

138

conversion is continuing at a steady pace. As of December 31, 1959, an additional $5,588,300 of this issue has been converted.

It will be seen that on the basis of an equity ratio of 27.08% and an overall rate of return of 7% the return for the common would be 14.18% and this is well in line with the allowances on common equity in our rate cases up to 1955.

Q. Mr. Symonds, will you turn to page 21 of your rate of return study and explain the data shown on that page? A. Page 21 shows the capital of Tennessee as we anticipate it will be as of September 30, 1960. The statement includes an increase of long-term debt in the form of a debenture issue in the amount of $40,000,000 at an estimated cost of 6%. In addition, adjustments have been made to long-term debt as well as preferred stock for sinking fund operations required by our long-term debt and preferred stock for sinking fund operations required by our long-term debt and preferred stock agreements. There is also included $29,517,800 of 5% convertible second preferred stock which was issued in November, 1959, at a cost of 5.17%. In addition, Tennessee plans to issue 1,500,000 shares of common stock, the proceeds of which are estimated to amount to $52,500,000. The equity capital has been adjusted to include that amount as well as normal accretion to surplus based generally on experience in the past, and the balance of the 4.50% convertible second preferred stock.

It will be seen that the long-term debt which is estimated to comprise 56.49% of our total capital as of September 30, 1960, will have an estimated cost of 4.35%. The common equity, amounting to 30.51% of total capital would have a return of 12.78% on the basis of an overall return of 7%. In my opinion, this rate of earnings is absolutely necessary in order to protect the financial integrity of Tennessee and to keep it in a position to attract the capital needed in its business on reasonable terms and conditions.

I would like to point out also that on the basis of September 30, 1959 capitalization and cost of capital, the interest on long-term debt would be covered 2.85 times with a 7% overall return. I believe that coverage of this order is necessary to maintain the investment qualities of Tennessee's debt securities.

Q. Mr. Symonds will you turn to page 22 and explain the information shown thereon? A. The data on page 22 are for the purpose of showing what the Commission has allowed in past rate cases on common equity, as well as the common equity ratio in each case. I had the Federal Power Commission rate case decisions analyzed from about 1948 to date. I tabulated those rate case decisions in which the Commission's findings on rate of return made possible a determination of the equity ratios and the amounts allowed thereon by the Commission. There were several decisions

involving subsidiaries of the Columbia Gas System as to which the Commission allowed an overall rate of return of 6.25%, but inasmuch as these related to the same basic data I have listed only one of the cases, namely, United Fuel Gas Company.

I have previous pointed out that the pure cost of money today is substantially higher than in past years. In my opinion, therefore, the rates of return on equity allowed by the Commission in past years must be adjusted in order to allow for this increase in the pure cost of money. The adjustments made for this purpose are shown in Column 7 of page 22 and were determined in the following manner. First, I used the yield on Moody's triple A public utility bonds as a basis for measuring the increase in the pure cost of money. The average yield on such bonds for 1959 was 4.49%. I might state that the yields were taken directly from Moody's publications for the first six months of 1959 and were computed for the last six months from

the weekly figures published by Moody's. Column 6 of page 22 shows the yield on Moody's triple A bonds for the particular year as to which the Commission determined the equity ratio. Column 7 shows the increase in yield from the particular year to the 4.49% average yield for 1959. Column 8 shows the allowance on equity which must be made in order to give effect in each case to the increase in pure cost of money. For instance, the decision which is identified as Number 4 was based upon data for 1952, during which year the yield on Moody's

triple A bonds was 2.99%. The difference between that yield and the average yield for 1959 or 4.49% was 1.5%. The amount allowed on the common equity by the Commission was 10.11% and I adjusted this to 11.61% by adding the 1½% just described to allow for the increase in the pure cost of money between those two years.

Q. Will you please turn to page 23 and explain the graph shown thereon. A. Page 23 reflects in graphic form the data shown in Column 4 and 8 of page 22. My procedure was to furnish this data to the mathematicians in our Electronic Research Department for the purpose of having them fit a curve representing the data. The curve on page 23 is the result and it can be seen that the curve fits the data very well. I might point out that the numbers on the graph are geared to the numbers on page 22 identifying the particular decision.

The chart shows that there has been much more consistency in the Commission's allowances on common equity than would be gleaned from merely studying the allowance on the equities without reference to the equity ratios involved. The chart shows very clearly that the Commission has recognized the importance of equity ratios in fixing the allowance for common equity, allowing higher returns on equity as the equity ratios decrease.

I have previously pointed out that on the basis of a

142

common equity ratio of 30.51% which is anticipated for Tennessee as of September 30, 1960, a 7% overall return would result in an allowance on common equity of 12.78%. Reading from the curve on page 23 we find that the allowance for a 30.5% common equity would be about 12.7%. This proves, in my opinion, that Tennessee's claim of 7% overall rate of return in this case is thoroughly consistent with the rate case decisions of the Federal Power Commission.

Q. Mr. Symonds, would you now summarize briefly the factors which, in your opinion, require a 7% rate of return for Tennessee at the present time? A. Yes. First, I would like to point out again that in every rate filing of Tennessee, until the filing in Docket G-11980 in 1957, we requested a rate of return of only 6%. We felt that such an overall rate of return would enable us to pay our interest costs and give us sufficient earnings on the equity to continue to expand. However, when the cost of our senior money rose substantially, it became apparent that we could not continue to finance our expansions on reasonable money terms unless we were able to obtain an increase in the overall rate of return to offset the increase in the cost of our senior capital. That was the reason Tennessee requested a rate of return of 6.6% in Docket G-11980; a rate of return of 6.8% in Docket G-17166; and a rate of return of 7% in this case.

The evidence I have presented, and the evidence which

143

will be presented by Mr. Katzenbach who will follow me on the witness stand, conclusively demonstrates, in my opinion, the complete inadequacy under present conditions of a 6% rate of return, and the need for a rate of return

of at least 7%. I have called attention to the fact that a 7% rate of return today does not provide a greater rate of return to the common equity than 6% provided just a few years ago. To me that is proof positive that the 6% rate of return era is a thing of the past. It is just as much a thing of the past as 3% long-term money is a thing of the past for the United States Government.

Whether we like it or not, the fact remains that inflation has forced up the cost of money. Companies, like ourself, that have expanded in recent years have had to pay the higher cost of money. And if the companies are to continue to expand on reasonable terms, such higher cost of imbedded money must be recognized in the rate of return allowed.

Finally, I would like to call attention to the fact that our immediate plans for additional financing contemplate the thickening of our equity. In my opinion, the thickening of equity is desirable from all points of view, namely, customers, Commission and management. The thickening of our equity, however, will permit a somewhat lower rate of earnings on the equity in recognition of the lessening of the risk of the equity. This fact has been recognized by us in our claim for a 12.78% return on the thicker equity in contrast

to the 15% and 15% return on equity heretofore allowed by the Commission on the thinner equities of Tennessee.

As I have stated before, it has been Tennessee's policy to continue to expand to meet the increasing requirements of our customers. We want to and we intend to continue that policy. However, we can only successfully pursue such a policy if the increased cost of capital is recognized in the rates of return allowed by the Commission.

. . . . . .

150

L. E. Katzenbach

By Mr. Littman:

Q. Will you please give your name, address and occupation? A. My name is L. Emery Katzenbach II. I reside in New Canaan, Connecticut. I am a general partner of the firm of White, Weld & Company, 20 Broad Street, New York, N. Y.

Q. Will you please outline the nature of the business conducted by White, Weld & Co.? A. White, Weld & Co. is engaged in the field of investment banking and securities brokerage. The firm is a member of the New York Stock Exchange, the American Stock Exchange, and other principal securities and commodity exchanges.

In the field of investment banking the firm has acted as the manager or co-manager of a substantial volume of public offerings of first mortgage bonds, debentures, preferred stocks and common stocks in many types of industries. The firm also participates as an underwriter and distributor of security offerings underwritten by groups managed by other investment banking firms. In addition, the firm is active in negotiating direct placements of security issues with institutional investors.

Q. Will you please explain briefly the difference in position between a managing underwriter and firm which acts as an underwriter in a group headed by another firm?

151

A. The managing underwriter of a group formed to purchase and distribute a new security issue carries on the direct negotiations with the issuing company in shaping the form of financing, the terms of issue, the public offering price, and the many factors which go into the creation and distribution of a security offering. It is responsible for forming a group of underwriters, each of which,

acting severally for its own account, underwrites a specific portion of the new issue; its acts as the representative of the underwriting group in managing a public offering. On occasion two or more firms may act as the managing underwriters. The other investment banking firms who participate in the underwriting and distribution of the issue, each exercise independent judgment in undertaking their individual underwriting commitments, but they ordinarily do not take a direct part in the negotiation of the form and terms of the proposed issue.

Q. Can you furnish some measure of the scope and size of White, Weld & Co.'s position in the investment banking field? A. Yes, during the last five years White, Weld & Co. has acted as the managing underwriter or as the co-manager of public offerings of corporate securities aggregating more than three billion dollars. As measured by this yardstick, the firm has ranked in size between the fifth and seventh largest investment banking house in the country, depending on

year-to-year fluctuations in our underwriting activity.

Q. Some firms tend to hold a pre-eminent position in one or more industries insofar as their underwriting and securities businesses are concerned. Is that the case with White, Weld & Company? A. White, Weld & Co. is generally considered; I believe, to have a broader degree of familiarity with and experience in the natural gas pipeline industry than any other firm in the country. The firm has acted as a managing underwriter for Tennessee Gas Transmission Company, Transcontinental Gas Pipe Line Corporation, El Paso Natural Gas Company, Texas-Illinois Natural Gas Pipe Line Company, Pacific Northwest Pipeline Corporation, Trans-Canada Pipe Lines Limited, and a number of other smaller transmission and distribution systems.

Q. Please give a brief account of White, Weld & Co.'s activities and position in the securities brokerage business? A. As measured by the volume of business transacted on the New York Stock Exchange, White, Weld & Co. is among the larger securities brokers; in addition to its business transacted in listed securities, it is also very active in the trading of unlisted securities in the over-the-counter market.

Q. In this connection do you advise your clients and make recommendations for the purchase and sale of securities? A. Yes, our clients normally seek our advice and

recommendations. We maintain an active and sizeable Research Department, which is engaged in security analysis. We are constantly engaged in the appraisal of various industries from an investment standpoint and in the appraisel of individual companies within these industries. We also have an Investment Advisory Department which renders overall portfolio management service to those of our clients who desire constant surveillance of their investment accounts.

Q. Are your clients primarily individuals or institutional, professional-type investors? A. So far as bonds, debentures and preferred stocks are concerned, our clientele is comprised primarily of institutional investors since it is this type of account which provides by far the largest source of demand for fixed income securities. So far as common stocks are concerned, the type of clientele is far more varied. We do a substantial business with individuals, a large part of which is handled through our Investment Advisory Department. I should say, however, that the most important part of our common stock business is with institutional investors—that is to say, with funds which are administered by professional investment managers. These would include trust companies,

investment trusts, insurance companies, pension funds, charitable institutions, and the like.

Q. Do these professional investment managers seek White, Weld & Co.'s advice and recommendations?

154

A. Yes, they do, especially in those fields or industries which are followed most closely by our partners and research staff.

Q. Does your research staff, aside from your underwriting activities, closely follow the natural gas transmission industry? A. Yes.

Q. Can you please furnish a brief outline of your business experience in the investment banking and securities brokerage business? A. From 1935 to 1938, I was employed in the research department of Riter & Co., an investment banking and brokerage firm in New York City. From 1938 until 1940, I was associated with Tucker, Anthony & Company, of New York, also an investment banking and brokerage firm; I was also a member of the research department of the firm. In 1940, I entered the employ of White, Weld & Co. I have been a general partner of the firm since 1950.

Q. Please describe the nature of your duties and responsibilities with White, Weld & Co.? A. My responsibilities lie primarily in the underwriting and investment banking end of our business. I am a member of the firm's Executive Committee. I am also a member of the Investment Advisory Committee which shapes the policy of our Investment Advisory Department.

155

Q. To what extent have you personally had experience in the underwriting and analysis of natural gas pipeline securities? A. More of my time has been devoted to this industry than to any other.

Q. Do you serve on any committees outside of your firm? A. Yes, I am Chairman of the Oil & Gas Securities Committee of the Investment Bankers Association of America.

Q. Do you know what rates of return have been allowed by the Federal Power Commission in earlier rate cases involving Tennessee's rates? A. It is my understanding that, including the present case, there have been nine rate cases involving Tennessee's rates. The first of these cases was settled out at a 6 percent rate of return in 1947. In each of the following three rate cases, a rate of return of 6 percent was allowed by the Commission. The next case, Docket G-2434, was withdrawn. In Docket G-5259, the sixth case, Tennessee claimed a 6 percent rate of return. In Docket G-11980, Tennessee claimed a 6.6 percent; in Docket G-17166, Tennessee claimed 6.8 percent; and in the present case Tennessee is claiming 7 percent. No decisions have been handed down nor settlements reached in any of the cases since Docket G-5259.

Q. In your opinion was the 6 percent rate of return allowed by the Commission in Tennessee's previous rate cases

more than adequate under the conditions then existing to attract capital on favorable terms? A. No, I certainly do not believe that the Commission erred in any of its previous decisions in allowing a 6 percent rate of return to Tennessee. That return was not more than adequate to attract capital on favorable terms.

Q. In your opinion what overall rate of return is now required by Tennessee in order to attract capital on favorable terms? A. In my opinion a rate of return of at least 7 percent is required for that purpose.

Q. Please give the basis of your opinion? A. In order to raise debt capital and preferred stock capital on favorable terms, the Company must be able to demonstrate an

earning capacity which provides a satisfactory margin of coverage of fixed charges and preferred dividend requirements; and in order to attract common stock equity capital the Company must be able to compete effectively with other industries which are attracting equity funds. As a result of the increase in interest rates which has taken place in all segments of the money market, Tennessee has experienced a rapidly increasing cost of borrowed capital. The same trend is evident in the cost of preferred stock capital, though in this case the rise has not been quite so steep. It is obvious that unless there is a compensating increase

in the overall rate of return, the margin of earnings coverage for fixed charges will decline and the balance of earnings available for the common stock equity portion of the capitalization will suffer a squeeze to the detriment of the common stockholders' position.

Q. How, in your opinion, is it possible to arrive at the overall rate of return which is sufficient to place Tennessee in a position to meet the criteria you have just outlined and thus to attract capital on favorable terms? A. This can be done by reference to Tennessee's position several years ago before the impact of higher interest costs became a serious factor and by reference to the degree of protection and relative rates of return which are afforded by other investment media which are competing for capital funds in the same markets from which Tennessee must draw in order to obtain its financial requirements.

Q. What conclusions do you draw from a comparison of Tennessee's present capital costs with those in earlier years? A. It is clear from an analysis of the figures that an overall rate of return of 6 percent has become wholly inadequate; it is also apparent that a return of 7 percent is barely sufficient, under present conditions, to maintain

Tennessee's coverage ratios for interest and preferred dividend requirements and to prevent an erosion of the earnings remaining for the funds which have been invested in the Company's common

158

stock equity by its large body of common stockholders.

Q. Have you prepared a schedule or analysis to demonstrate these points? A. Yes, I have.

Q. Was Exhibit 14 prepared by you or under your direction and supervision? A. Yes.

Q. Please explain pages 1 and 2 of your exhibit. A. Page 1 shows the capital ratios at the balance sheet dates which were available immediately preceding the institution of the first rate case by the Commission and immediately preceding the rate filings in the other rate cases in subsequent years. Using these figures, I have made the computations on page 2 of my exhibit, which show the coverage ratios for interest requirements on long term debt.

For example, reference to Page 1 shows that the return element based on the balance sheet for September 30, 1946, was 1.53% for long term debt, 0.51% for preferred stock and 3.96 for common equity. The total of these figures comes to 6%, which is the overall rate of return allowed at that time.

If we divide the return element for long term debt, namely 1.53%, into 6%, which is the overall rate of return, the resulting figure represents the coverage of interest requirements under the given circumstances. In this case, the

159

the coverage figure works out at 3.92 times, as shown on Line 1 in Column 5 of Page 2. The corresponding calculations made for each of the succeeding balance sheets

(159)

given on Page 1 of my exhibit are shown in Columns 5, 6, 7 and 8. The figures shown in parentheses in the lower part of Column 5 show the coverage as it would be if 6% were to remain the overall rate of return.

Q. Will you please give us what conclusions you draw from the information appearing on Page 2 of your exhibit? A. Starting with September 30, 1946, the coverage of interest requirements on long term debt was shown to be 3.92 times. On April 30, 1951, about four and a half years later, the coverage was shown to be 3.16 times. The coverage factor is lower in each succeeding balance sheet and by August 31, 1954 the coverage had declined to 2.60 times. On October 31, 1956, when the rate of return claimed was 6.6%, the coverage figure recovers to 2.81 times by virtue of the higher overall rate of return, but even so this coverage factor is still less than was the case prior to 1952.

As of July 31, 1958, when the Company claimed a 6.8% rate of return, this further increase in the overall rate of return still fails to maintain the coverage factor at the level as shown for the 6.6% rate of return as of October 31, 1956. Similarly, the 7% rate of return claimed by Tennessee in the present proceeding, for which balance sheet data are presented

160

for July 31, 1959, does no more again than maintain the coverage at about the same level that prevailed prior to 1954.

Q. What is the significance of the coverage ratios that you have discussed? A. The coverage ratio is the most important single statistical measure used by investors and analysts in appraising the investment quality of debt securities. This ratio shows at a glance the margin of protection for interest requirements. Obviously, the higher the coverage ratio the higher the investment quality of the

issue. A declining trend in coverage ratio, whether the result of declining earnings or the result of higher interest charges, presents a picture of deteriorating investment quality.

Q. On page 2 of your exhibit, the computations were based upon the capitalization ratios existing on the particular dates in question. I notice that there have been some changes in the capitalization ratios from one date to the next. Is it not true that a shift in the proportion of long term debt upward or downward would have an effect on the interest coverage figures? A. Yes, that is true, although in Tennessee's case the shifts in the capitalization ratios have not been wide. However, to demonstrate what the picture would look like during constant capitalization ratios, I have made similar computations

using the average capitalization ratios, which is shown on page 3 of my exhibit.

Q. Will you please expkain page 3? A. This page simply uses a constant capitalization ratio based on the average of all the figures on all of the balance sheets. After having arrived at the average capitalization ratio, I have used the actual cost of long term debt on the balance sheet dates to arrive at the return element, and then divided such return elements into the overall rates of return in order to obtain the coverage figures.

Q. What is the significance of page 3? A. This page eliminates the variable which is introduced by shifting capitalization ratios. Again, it demonstrates the deteriorating coverage figures through August 31, 1954, and points up the fact that the 7% return does no more than restore and maintain the coverage figures at a level comparable with those of 1954 and prior years before the impact of rising interest costs was severely felt.

Q. Is the manner in which you have calculated the cover-

age of interest requirements on long term debt the same as that normally applied by investors and analysts? A. The coverage figures shown on page 3 are derived on the basis of earnings after income taxes because the overall rate of return is calculated after income taxes. It is perhaps more customary to measure coverage of interest

162

requirements against earnings before applicable income taxes, but I would say that both bases are acceptable and frequently used. The reason for computing coverage on the basis of earnings before income taxes lies in the fact that interest requirements are, of course, deductible in computing the income tax liability.

Q. Have you made any analysis of interest coverage ratios for Tennessee based upon earnings before deduction of income tax? A. Yes, I have.

Q. What does this analysis show? A. It indicates that about the same increase in overalll rate of return is required in order to maintain coverage of interest requirements on a pre-tax basis as on an after-tax basis.

Q. Will you please explain why this is so? A. I think one specific example will demonstrate my point. The figures shown on page 2 show that as of June 30, 1953, the after-tax coverage figure was 2.73 times using an overall rate of return of 6% compared with 2.70 times as of July 31, 1959, using an overall rate of return of 7%. The following method is a reasonable one to demonstrate the comparative pre-tax coverages. Taking the 52% federal income tax rate, a figure representing income taxes may be obtained in the following manner. Referring to the figures

163

for June 30, 1953, as shown on page 1 of my exhibit, it may be seen that the figures representing return element for preferred and common stock of 0.62% and 3.18% are

the equivalent of net income after taxes. The sum total of these two elements is 3.80%.

If you multiply this figure by 1.0813, the result is equivalent to the federal income tax at the 52% rate. The resulting figure for taxes is 4.12%. If we add this figure to 6%, we obtain 10.12% as the equivalent of earnings before income tax and before interest. Dividing this figure by the return element for long term debt of 2.20%, we obtain a pre-tax coverage ratio of 4.60 times. The corresponding computations made with respect to the capitalization as of July 31, 1959 show a figure of 11.78% for earnings before taxes and interest, and a coverage ratio of 4.55. Thus, as between these two periods the ratios are quite close, whether measured against earnings before or after taxes.

Q. Would you please now summarize your views with respect to the need for a 7% rate of return to maintain adequate coverage ratios? A. It is clear that a 7% rate of return is vitally necessary to Tennessee in order to maintain the margins of interest coverage protection which prevailed in earlier years. In fact, 7% now still does not produce the measure of interest coverage protection which prevailed prior to 1953.

164

I know from firsthand experience in dealings and negotiations with investment officers of institutions which represent the market for, and from whom the funds must come for the new issues of debt securities, that the maintenance of adequate margins of coverage of interest requirements and sinking fund payments is a matter of prime importance and that if these margins of coverage are allowed to deteriorate further, the result would be a definite downgrading in the investment quality of Tennessee's securities in the eyes of investors.

This can only lead to a situation where Tennessee is placed at a disadvantage with respect to the terms upon

which it can obtain additional capital for its future expansion. The figures and computations shown on pages 2 and 3 of my exhibit may seem a trifle theoretical but the problem is not a theoretical one by any means. The figures and computations merely serve to demonstrate that a 7% return under present conditions is no more than sufficient to maintain the standard of financial soundness which Tennessee was able to present to investors in past years.

Q. Your comments thus far have been directed primarily to Tennessee's debt issues. Do the same considerations apply to preferred stock? A. Yes, they do. The standard measurement for investment quality of preferred stock issues is the coverage ratio for interest and preferred dividend requirements. This ratio is

usually called overall coverage of interest and preferred dividend requirements. The figure is obtained by dividing this total of interest and preferred dividend requirements into earnings after income taxes and available for interest. An analysis similar to that which I have outlined for debt securities would show substantially the same results.

Q. Earlier in your testimony you stated that Tennessee's need for a 7% rate of return could also be tested by reference to the degree of protection and relative rates of return which are afforded by other investment media which are competing for capital funds in the same markets from which Tennessee must draw in order to obtain its financial requirements. Will you please elaborate on this aspect of your testimony? A. Fundamentally, of course, Tennessee, and the pipeline industry generally for that matter, must be in a position to compete in the capital market for the funds with which to provide for expansion. If we direct our attention to the common stock position of the company's capital, this means that Tennessee's common stock

must offer enough inducements to common stock investors to attract funds it needs on satisfactory conditions.

Q. What form of inducement do you refer to? A. Reduced to basic fundamentals of investment philosophy, investors are motivated to buy common stock in the hope that their investments will show a rising trend of

166

dividend payments with attendant appreciation in the market value of their holdings. There are, of course, a wide variety of common stocks having past records and future prospects which meet these investor requirements. In deciding whether or not to buy a given common stock, the investor will first appraise the degree of risk which he considers to be present; it is obvious that the higher the degree of risk, the higher the financial reward he will require as a prospective return on his investment.

Q. How does the risk factor enter into the investor's appraisal of what represents an attractive or satisfactory rate of return? A. In appraising the securities of a given company, the investor will first consider the risks of the business enterprise as a whole in comparison with other companies. He will reach a conclusion that the company under reveiw fits in a certain place or area in the spectrum or range of risks which are present in all business enterprises.

In appraising the common stock, his next step would be to analyze the company's capitalization ratios to measure the further element of risk which is imparted by the existence of senior securities having a prior claim on the company's assets and earnings. The lower the common stock equity as a percentage of total capitalization, the greater is the degree of this additional element of risk.

167

The common stock of a somewhat cyclical manufacturing enterprise having a 75% common stock equity ratio might

thus be judged to be of about the same risk factor as the common stock of a relatively stable public utility company having a 25% common stock equity ratio, but within a given industry or as between two industries which are considered to be of approximately the same degree of stability, the risk factors attendant upon the common stocks of individual companies will vary according to the differences in common stock equity ratios.

Q. Are there other regulated industries which in your judgment are regarded by investors as being somewhat comparable to the natural gas transmission companies from the risk standpoint? A. Yes, I believe that electric light and power distribution companies are regarded by investors as being somewhat comparable on this score.

Q. Do you believe the electric industry is surrounded with less or greater risks than those attendant upon the gas pipeline industry? A. The natural gas pipeline industry, in my opinion, is regarded as having somewhat greater risks than the electric industry.

Q. Why is this so? A. Natural gas is a wasting asset and while the industry

has been generally able to replace withdrawals with new additions to reserves, the investing public recognizes there is a limit to the total available reserves. For this reason, the long term future of the pipelines is considerably less certain than that of the electric industry. This particular aspect is reflected in the fact that natural gas pipeline bonds must carry shorter maturities and heavier sinking funds than bonds of electric companies.

Q. Are there any other reasons why the natural gas pipeline industry is regarded as having somewhat greater risks than the electric industry? A. Yes. The investing public does not consider the end uses of natural gas to be as broad and varied as electricity. Natural gas has many

advantages over other forms of fuel and energy but the fact remains that in the past some sections of the country have prospered without natural gas service, whereas the same sections, had they lacked electricity, would have been economically crippled. For this reason, the natural gas industry does not enjoy quite the same degree of recognition by investors as a vital segment of our national economy.

Q. Taking the natural gas transmission industry as a whole on the one hand and the electric industry on the other hand, do you believe that the gas transmission industry needs a greater rate of return on common stock equity in order to attract common stock capital than the electric utility industry

earns under regulation? A. Yes, I most certainly do.

Q. Have you made a study which shows the rate of return earned on common equity by the electric utility industry? A. Yes, I have. That study is contained on page 4 of my exhibit.

Q. Please explain page 4. A. Page 4 contains a list of 25 public utility stocks of companies engaged primarily in the electric business. The list is divided into three categories: growth stocks, combination growth and income stocks, and income stocks. These particular issues and this specific grouping represents the group of stocks which our public utility departm.at recently recommended for purchase pursuant to a memorandum which was distributed in our office last December.

I simply took this list and had the statistics prepared in the manner shown. Page 4 shows that the group of growth stocks earned a 13.1% rate of return for 1958 on an average common stock equity ratio of 36.1%; it shows that the growth and income group earned a rate of return of 11.3% on an average common stock equity ratio of 37.3%; and it

shows that the group of income stocks earned a rate of return of 10.9% on an average common stock equity ratio of 35.2%.

Q. These companies are those chosen by your public utility department as being especially attractive in their

170

particular categories—is that correct? A. Yes.

Q. Do you have figures for a broader sample of the electric industry? A. Yes, I do. These figures are contained on page 5 of my exhibit.

Q. Please explain page 5? A. Page 5 is a compilation taken from statistics published by the Federal Power Commission. The full title of the publication is "Statistics of Electric Utilities in the United States, Privately Owned." This publication includes a condensed statement of combined balance sheets and income accounts of the electric utilities classified as Class A and Class B privately owned companies operating in the United States.

According to this publication, the utilities included in these classifications comprise, on the basis of both assets and revenues, in excess of 98% of the privately owned electric power industry. The exhibit covers a 10-year period from 1949 through 1958. Among other figures, the exhibit shows the amount of gross income as a percent of average total capitalization. It also shows net earnings available for common as a percent of average common equity—in other words, the return on common stock equity. It shows the average common stock equity as a percent of total capitalization.

171

Q. What conclusions do you draw from pages 4 and 5? A. These pages demonstrate that the electric utility industry is more conservatively capitalized than Tennessee.

The electric industry's common stock equity at around 36-37% is substantially thicker than Tennessee's.

These pages clearly show that the electric industry has on the whole been able to earn, under rate regulation, a return of close to 11% on its relatively larger common stock equity base; and that there are a number of electric companies, whose commons are available in the market, which earn 13% and more on the funds which their common stockholders have furnished and which still are capitalized with a higher equity ratio than Tennessee.

Q. In your opinion, would investors be attracted to Tennessee's common stock if Tennessee earned a rate of return on its common stock equity about equal to that shown for the electric utility industry on page 5, namely about 11%? A. No, they would not.

Q. Why do you believe this to be so? A. In the first place, the natural gas pipeline business, in the eyes of investors, does not enjoy the same high standing as the electric industry in terms of fundamental economic necessity and importance in our national economy. Secondly, Tennessee's common stock equity is lower than the 37% average shown for the electric industry: this in itself demands a

higher return, for the reasons I have given earlier.

Q. Do you have an opinion as to the rate of return on common equity which is required to place Tennessee's common stock in a position relatively as attractive to investors as the electric industry? A. The answer depends to some extent on the common stock equity ratio taken as the starting point. On page 1 of my exhibit, the common equity ratio shown is about 27% for July 31, 1959. Taking the common equity ratio at this level, I believe that a rate of return of 14 to 15% is required on common equity.

Q. Will you please explain how you have arrived at this

conclusion? A. I have relied primarily on a direct comparison with the electric industry. The comparison with electric utilities is a very real one with practical rather than academic significance. I say that because we have seen a number of actual instances where investment managers have shifted from gas transmission stocks to electric utilities simply because of the fear that the pipelines may not succeed in maintaining an adequate rate of return on common stock equity.

Moreover, we know from our constant contact and business relations with the policy-making officers of insurance companies, investment trusts and similar institutional investors that the position of the gas transmission industry vis-a-vis the electric

173

utility industry is a primary consideration entering into their investment decisions.

In looking at the electric industry we find, as illustrated on page 3 of my exhibit, that even in this relatively small list of companies there are a number which have been earning 14% and more on common stock equity as high as 36 to 37% of total capitalization. This list could be expanded to include more such examples. If we look at the electric industry as a whole, as illustrated on page 4 of my exhibit, we find, as I have previously testified, that the rate of return on common stock equity has been close to 11% over many years, while at the same time this industry's common stock equity ratio has been maintained at the 36 to 37% equity ratio.

If we were to compute the return on Tennessee's common equity, assuming capitalization ratios similar to the electric industry—namely 36-37% common stock equity, 11-12% preferred and 52-53% debt—we find that a 7% return overall would produce about 11½% on common stock equity—only slightly higher than the entire electric

industry is able to show. This latter comparison tends to equate Tennessee with the electric industry insofar as capitalization ratios are concerned, and permits a more direct comparison on the basis of the differences in risk between Tennessee on the one hand and the electric industry on the other. It shows only a slightly higher return in favor of Tennessee to compensate for the higher

174

degree of risk attendant upon Tennessee's business.

Q. Do you consider the regulated portion of Tennessee's business, with which we are concerned in these proceedings, to be subject to any greater or lesser degree of risk than the natural gas transmission industry, as you have used the term? A. No, I believe that the regulated portion of Tennessee's business may be regarded as being subject to about the same degree of risk as that which I have in mind when referring to the natural gas transmission industry.

Q. When recommending the stocks included on page 4 of your exhibit as you did last year, were you expecting that these companies would be able to continue in the future to earn rates of return on their common stock equity within the same general range experienced in the preceding year, on which the figures shown on page 4 are based? A. Yes, that is correct. In analyzing any industry or any company within an industry, one must assess every available factor which would bear upon its ability to earn a satisfactory rate of return in the future. If the past performance has been satisfactory but the outlook is for a declining rate of return, that company's common stock becomes unattractive in relation to other stocks which have a satisfactory outlook.

Q. Does the earnings-price ratio in any way reflect

175

the investor's opinion as to a satisfactory rate of return on the common stock equity or book value of a given com-

pany? A. Quite clearly, that is not the case. As I just stated, we expect that the groups of stocks shown on page 4 will continue to earn approximately the same rate of return on common stock equity capital as that experienced in the preceding year, namely about 11 to 13% on the average. The prices at which these stocks were selling showed an average earnings-price ratio of less than 6%, or less than half of the rate of return which these companies had earned in the preceding year on the common stock equity.

Q. Can you explain why the so-called growth stocks shown on page 4, which earn the higher rates of return on their common stock equity capital as compared with the other groups, show at the same time a lower earnings-price ratio? A. This is simply a reflection of the investor's willingness to discount the future. In fact, he is forced to discount the future if he is to be successful in managing his own investments.

A relatively low earnings-price ratio is simply another way of expressing a relatively high price in relation to past earnings. All other things being equal, including rate of growth, it is obvious that if past rates of return are maintained, the group of growth stocks will make faster progress in improving their earnings per share than the other two

groups.

For this reason, investors are willing to buy these stocks at a higher price in terms of past earnings per share; in other words, they have the prospect that, within several years, earnings per share will be as great as, if not greater than, the earnings per share which can be foreseen for other stocks which are expected to show a slower rate of gain in earnings. If any correlation could be found between earnings-price ratios and what it takes by way of earnings

or earnings prospects to induce investors to purchase common stocks, the result would show an inverse relationship rather than a direct one.

Q. As a rule, corporations do not pay out all of their earnings as dividends to stockholders. Is it not true, therefore, that the actual return to the stockholder is limited to the dividends he receives rather than the rate of return earned by the company on its common stock equity? A. No, this is not the case. Nor do common stockholders look upon their investments this way. The entire balance of a company's earnings, after payment of interest and preferred dividends, belongs to the common stockholders whether paid as dividends or not.

Management usually pursues a policy of paying out in dividends only a portion of the stockholder's earnings and reinvesting the remainder of these earnings in the company's

business. In this way, the common stockholder's stake in the company is increased and he, of course, expects the earnings on his original investment to grow accordingly. The result of this process, when the expectations are fulfilled, is an increasing trend of dividend payments and an increase in the underlying value of the stockholder's investment.

It follows that the higher the rate of return on common stock equity, the faster the rate of increase in earnings available for dividends and underlying value of the investment. Accordingly, investors look directly to the rate of return on common equity in measuring the attractiveness or lack of same of one common stock as against the multitude of investment choices available in the market.

Q. Will you please summarize briefly the factors which, in your opinion, support Tennessee's need for an overall rate of return of 7%? A. If Tennessee is to be in a posi-

(177)

tion to attract capital on competitive terms, it must be allowed a rate of return which recognizes and offsets the effect of the increasingly higher cost of senior capital and maintains adequate margins of coverage for interest and preferred dividend requirements. A 7% return now provides less margin of coverage for Tennessee than was the case of many years when 6% was the accepted rate of return.

If Tennessee is to remain in a position to compete for

178

equity capital on sound terms, it must be allowed an opportunity to earn a rate of return on the funds provided by its common stockholders which is commensurate with that obtainable by other companies and industries, after adjustment for differences in risk. A 7% return now provides no more than enough on the equity investment to meet this criterion. Anything less than 7% would place Tennessee at a disadvantage in the market place for equity capital.

• • • • • • • • • • •

301

Presiding Examiner: Mr. Littman, let me interrupt here, because I think they are all getting tired at this point and we ought to wind this up quickly.

For the moment, I want to just put aside the suggestion made by Mr. Glendening that he might conceivably desire to offer some evidence in this proceeding which I would expect would be relatively minor on what he described as related matters which were not really developed from the standpoint of the current situation in the hearing in the Docket G-11980.

I want to direct our attention only briefly to the suggestion thrown out by Mr. Smith that the Columbia System, in the event the Commission should decide the zoning issue in Docket G-11980 in a way that is not satisfactory to them

might then wish to try the zoning issue all over again in this case.

Now, it seems to me—and I am not going to comment at the moment on Mr. Littman's request that we get a stipulation which would insure that that would not develop here, but I want to indicate just preliminarily, for whatever it may be worth, that if, as and when an attempt should be made by any of the parties in this proceeding, and I am not talking now about the relatively minor tangential current developments Mr.

302

Glendening referred to, but if, as and when any of the parties in this proceeding should make an attempt to re-try the zoning issue again in this case, and when I refer to an effort to re-try the zoning issue in this case, I am talking about going all over again through the horrendous routine of developing all the evidence and all the argument for and against the systemwide allocation method, and all the evidence and all the arguments for and against the zoning method—there were two such zoning methods presented by the intervenors in this proceeding—and all the evidence and exhibits for and against using the Tennessee method in 11980 of splitting the transmission costs 50 per cent on the basis of the historical rate pattern and 50 per cent on the basis of the land mile-commodity mile method.

I want to make clear that I would not permit any such attempt in this proceeding, so I think, Mr. Littman, that your request that the parties stipulate is unnecessary as far as I am concerned.

I think it would be perhaps even wasting time to try to get the parties to stipulate, unless informally, off the record you find it possible very simply to get all the parties to agree immediately that they would be happy to enter into such a stipulation, but I don't want to take up the time this evening.

Mr. Littman: I take it you don't consider it would be

(303)

303

necessary for us to incorporate by reference our evidence on the allocation issue from 11980 into this instant proceeding?

Presiding Examiner: It not only be necessary, but I would not permit it.

. . . . . .

453

Presiding Examiner: I am sorry, I misunderstood you, Mr. Reeder.

I now pass to the zone allocation question. I think I would correctly understand, Mr. Reeder, that in your statement prior to the mid-morning's recess you indicated that you intend to bring Consolidated Natural zoning evidence as presented in the G-11980 proceeding up to date in this instant case by the presentation of further evidence on the zoning matter in our instant hearing. Is that correct?

Mr. Reeder: I stated this morning merely that we intended to bring our figures up to date as a first step and what we would do after that, I would have a further statement on; but that we do consider zoning to be an issue in this proceeding and we are merely respecting your Honor's desire that what is to be done about that issue be held in suspension until after the brief in G-11980 has been filed.

Presiding Examiner: Well, I don't recall, Mr. Reeder, that in my remarks on the question of zoning allocation issue at the last session that I was indicating my only objective was

454

to hold off the raising of the zoning issue application in this proceeding until after parties should file briefs on that

matter in G-11980. In fact, I made it quite clear that I did not expect the parties to re-try the zoning issue in this proceeding.

Now, without getting into argument I want to make a brief statement which I think will make clear to all parties my own view on the subject of the zoning issue as applied to the hearings in this docket.

455

As the parties are aware the last briefs on the zoning question in G-11980 are to be filed with the Examiner not later than March 25, and I will contemplate I will then commence work on my initial decision in this matter in Docket G-11980.

It seems to me, and of course my comments do not necessarily represent the view which the Commission may take and I am not trying to encroach, certainly, upon the responsibility and authority of the Commission:

But it seems to me that the final Commission decision, the zoning decision in G-11980 whenever it may be issued would be expect to be governing and controlling for the Tennessee system from that date on unless and until a showing might be made in some later proceeding that the situation with respect to the Tennessee system had so changed since G-11980 zoning studies that a new zoning study of the Tennessee System was required:

Under those circumstances it would seem to me that if any of the parties should attempt to present zoning evidence in this case other than some minor tangential matters such as referred to by Mr. Glendenning, and I have not yet had the opportunity to really understand what he has in mind so I am not going to make any comments on his comments at the last session, but in this proceeding unless the parties can make a convincing showing that such a change has occurred on

the Tennessee System since the G-11980 zoning studies so as to render the zoning studies in G-11980 obsolete, I would not expect any of the parties to put in evidence in our instant hearing to bring the G-11980 zoning evidence "up to date" and in this connection I will state that I have in mind the further objection to permitting any such situation to develop here, and that is, I would not regard it as appropriate to permit any of the parties to put in zoning evidence in this proceeding while the Examiner is working on the zoning decision in Docket G-11980 which might conceivably influence the Examiner's decision in G-11980 even though evidence offered in this proceeding were not actually made part of the G-11980 record.

Now, as I said, I don't expect any further discussion on this matter now but I will make my position perfectly clear.

. . . . . .

Gardiner Symonds

. . . . . .

Cross-Examination

By Mr. Spalter:

Q. Mr. Symonds, I would like to ask you first, with respect to your Exhibit 13, and turning to page 1 of that Exhibit 13, Mr. Symonds, you have assumed in that exhibit that the convertible second preferred has been converted into common stock, have you not, on that page? A. Yes, I have.

Mr. Werner: You said what—

The Witness: The 4.50 second preferred has been converted, as shown in the footnote.

By Mr. Spalter:

Q. Yes. Has this treatment of the 4.50 series been consistent throughout the exhibit, Mr. Symonds? A. It has been consistent throughout the exhibit. We

have from place to place shown what the effect would be if we did not do it. But it has been consistent in our assumption of the treatment of that issue of securities.

Q. Well, maybe I don't understand your answer fully.

On pages 6 and 7, is the assumption continued in there that the convertible preferred stock, 4.50 percent, has been converted? A. No. As I said in page 10 of my testimony, that is page 122 of the transcript, "Solely for the purposes of this comparison, in order to keep the equity ratios reasonably uniform, the 4½ percent second preferred stock was not included in the common equity in these calculations."

Mr. Spalter, while I am on that subject, if it would be a help to the record to keep it altogether, I might say that as of the end of March 1960 56.3 percent of the 4½ percent convertible second preferred stock had been converted as against 47.7 percent at the end of 1959, showing, as I point out in my direct testimony, that this conversion is continuing at a rapid rate.

Mr. Spalter: May I have the last part of that answer, Mr. Examiner?

Presiding Examiner: Starting where?

Mr. Spalter: With that 56.3 percent.

Presiding Examiner: Read the whole sentence.

(The reporter read from his notes as requested.)

599

By Mr. Spalter:

Q. Just to complete the picture, Mr. Symonds, what was the dollar value of that issue, as originally issued? A. 400,000 shares or $40 million, par amount. And on March 31, 1960, there remained outstanding only $17,463,700.

. . . . . .

604

Q. At the bottom of that page, Mr. Symonds, you state: "I believe that Tennessee is conservative when it includes

605

in the common equity for the purpose of this case only the balance of the 4.50 percent convertible second preferred stock which has not yet converted, but which is being converted at a rather steady pace."

To keep the record abundantly clear, however, when you so include that 4.50 percent convertible second preferred, you are not setting forth the facts as they exist at the time of the presentation of your balance sheet, or the situation with respect to your securities, as of the date of the presentation. A. As of the date of the presentation, 265,162 shares—that is the end of October 1959—were not converted, and, therefore, carried a 4.50 dividend as preferred stock rather than as common. That had been reduced, as I have already pointed out, to 174,000, or some 25 percent of the balance had been converted as of the present time.

But, as of that date, we were not conforming exactly to the facts, but, rather, to the intent of the issuance of this stock which we have always construed to be a manner and a means of increasing our common stock equity position.

. . . . . .

607

Q. Now, in arriving at that return on equity, at the ratio as shown on page 21, you have included therein all of the 4.50 second preferred stock, is that correct? A. Yes, I have.

Q. Isn't it a fact, therefore, that you are asking the Commission to allow you a 12.78 percent return on so many shares of second preferred stock of 4.50 percent that are not converted, and may not be converted for some time as against the actual interest rate or dividends that you have to pay on that stock? A. No, that is not so, Mr. Spalter, because if you deducted

608

the 4.5 percent—and that is only, remember, one of the series of preferred stocks that is outstanding—convertible stocks. If you deducted that from the common equity, we would have a lower amount of equity in the picture than the 30.15 percent that we show on that exhibit. And, therefore, I would have to contend, in line with past consistent policy of this Commission, for a higher return on the lesser equity than the 12.78. In other words, if you reduce the equity, the Commission has consistently allowed higher returns on the thinner equity.

Q. Well, I don't care to argue that point with you at the moment, Mr. Symonds. What I am interested in is that in your showing on page 21, you have included a request for a 12.78 percent return on shares of stock on which you pay a dividend of 4.5 percent, is that correct? A. I have. And if you—I have a computation here. If you struck that out—we have made a computation showing what the result would be. And if you took that out, you would then have a common equity of 28.84 percent, and a 7 percent return would yield 13.24 percent on that equity. I would be satisfied, and I think it would be consistent with Commission

policy, to allow me either 12.78, as page 21 shows, or 13.24, on the lesser amount of equity. Both would result in the same dollar figure.

Q. Well, Mr. Symonds, I am sure that your statement

609

"consistent with Commission policy" will be argued substantially in the briefs. I don't think we have to argue it here. I am just trying to establish the fact, and I think you have answered the question that insofar as that second preferred stock is concerned, you are, on page 21, asking the Commission for 12 percent.

. . . . . .

615

Q. Let me ask you, Mr. Symonds, do you believe that the investor risk in a company with a long successful record is the same as that of a company which is being newly started? A. By investor risk—

Mr. Werner: May I have the question, please?

Presiding Examiner: Read the question, Mr. Reporter.

(The question, as recorded, was read by the reporter.)

Mr. Werner: I am not clear, Mr. Spalter, on what you mean by investor risk. Now, if that is a term of art, and the witness knows what you mean, I have no objection to the witness answering. But I am not clear certainly on what you are talking about when you say investor risk. Which investor are you talking about—bonds, debentures, common stock investor, preferred stock investor, or general investor?

Mr. Spalter: As soon as you stop, I may try to answer.

616

Mr. Werner: All right.

By Mr. Spalter:

Q. Mr. Symonds, do you understand what I mean by the term? A. Not entirely, no.

Q. Well, the risk to the investor, the overall investor in a company that is just starting out in the business—the risk that he takes in putting his money into that business, as compared to a risk that an investor takes or might take in a company that has a long successful career. A. It can't be answered categorically, because you have got to take different kinds of companies. If you are talking about a manufacturing company, I would agree with you. If you are talking about a utility company—

Q. I have not stated a position. I don't know what you are saying you would agree with me. Are you saying that a manufacturing company, the risk would be the same at the outset of the company? A. No, in a manufacturing company it would be greater at the outset, and less after it is well-established—in a manufacturing.

Q. How about a company like Tennessee? A. I don't think there was any more risk. In fact, I think if anything there was less risk at the time we were formed than we are today. And the reason is this, we were

617

selling gas at very low prices. We had a big completely unsaturated market. We had the same position before this Commission that we have today, as far as the rate returned. The commercial risks in the business at that time were not as great as today, when our rates are approaching marginal costs in many areas. We had the same protection, if there is such protection, from this Commission's policy of consistent regulation. So I would say that there is no dif-

ference. And if anything, our risk in 1946 in Tennessee was less than it was in today—when you give consideration to that. Now, a manufacturing company would be entirely different.

Presiding Examiner: Mr. Symonds, I am not sure that is the question. You, in your last answer, have compared the risk of investors in Tennessee today with the risk of investors in Tennessee in 1946. I take it Mr. Spalter's question was to have you compare the risk of investors in a newly-created company today, as compared with the risks taken by investors investing in Tennessee today. Is that correct?

The Witness: Sir, he changed that after I talked about manufacturing companies, and said Tennessee, I believe. I think my answer was responsive.

Mr. Spalter: Yes, Mr. Examiner.

Presiding Examiner: Which question do you want answered?

Mr. Spalter: I accept the answer Mr. Symonds gave as

being responsive. I wasn't putting it at any point of time. I was talking about a company at the time it was organized, and after having become—having operated successfully.

Presiding Examiner: All right. I am sorry.

By Mr. Spalter:

Q. In your experience and your knowledge in this field, Mr. Symonds, would you say that your last answer is also true of electric distribution companies, that the risk insofar as those companies are concerned, is greater after they have successfully operated for a number of years, as against the operators at the outset, or the risk at the outset? A. No, I would answer you in just the reverse answer for electric companies, because their costs and their

rates and their competitive position has been improving, and they, too, are faced with the same standards of regulation that they had in the beginning. I would answer you just in the reverse for electric companies that I would answer you for Tennessee, or a company selling fuels in markets which were, let us say, underpriced and markets which are today marginal.

Q. Mr. Symonds, do you recall making a speech to the 41 Midwinter Trust Conference of the American Bankers Association, New York City? I don't have the date, I am sorry to say? A. February 10, but I don't recall the speech. I don't

have a copy with me. If you have it, I will be glad to refresh my memory.

Presiding Examiner: February 10 of this year?

The Witness: Yes.

Mr. Spalter: It is reported in the Commercial Financial Chronicle of March 31, 1960. It starts at page 6, and is continued on page 34. Turning to page 34, I wonder if you would care, in the light of your last answer, to explain that part of your speech where you stated, "When I tell you that in many respects both the bonds and stocks of gas pipelines and other divisions of the industry have advantages over those of electric utilities, don't be shocked." And you had your joke there when you said "no pun intended."

Now, does that statement as contained in your speech coincide with the answers that you have just given on this record, Mr. Symonds?

The Witness: I think they do. I would like to just follow on that, because I pointed out that in an economy faced with an inflation—a recurring—not necessarily constant, but a recurring inflation cycle, that the faster sinking funds, averaging 5 per cent per annum on gas bonds,

that is the next paragraph, as against little or less sinking funds on electric bonds, gives an investment opportunity of reconsideration to the gas pipeline holder over the electric holder. I was referring to a series of advantages which took place in the remainder of that long paragraph.

• • • • • • • • • • •

630

Q. I would like to refer you to transcript 618, please, and your answer beginning at line 13. Am I correct in understanding your answer at that point that you are saying that the natural gas business at the present time is somewhat in a reverse position with respect to the electric utility business because the natural gas business is pricing itself out of the market?

Mr. Werner: Mr. Spalter, are you referring back to your original question on page 616 at all?

Mr. Spalter: I am referring to the answer given by Mr. Symonds at transcript 618, lines 13 through 20, and particularly his answer beginning at line 17.

631

Mr. Werner: All right.

A. I think what I was—may I have the question back?

Presiding Examiner: Read it, please.

(The pending question, as recorded, was read by the reporter.)

A. I would not draw that entire conclusion by my answer; I said the electric distribution business; I limited my answer to—or I thought I had, because your question referred to electric distribution companies.

But what I was trying to point out was that, as manufacturing companies, going back to your previous question, become more seasoned and more stable, as they grew older and were more established, that gas transmission

business did the same until they became close to a marginal position. Electric distribution companies, because of technical advancements which have enabled them to reduce costs, remain in the same increasingly stable position that manufacturing companies do; but that gas companies today are becoming close to the marginal markets; that they are not there yet, but that they have that position. And over the years, as they go into a marginal position, that would be the case.

By Mr. Spalter:

Q. When you say that would be the case— A. That would be the—

Q. They would be then pricing—

632

A. They would be then pricing themselves out of the market. But I said that that was a trend because they have not had the advantage of the technological advancement that the electric companies have had.

Q. Going back to the transcript of your direct testimony, page 132, at lines 8 through 16, you are discussing the propriety of determining the return to be allowed on common equity by use of earnings-price ratios. Do you have that? A. Yes.

Q. Is that correct? A. Yes.

Q. Is that what you were discussing there?

And you go on to say that, based on earnings-price ratios for common equity, a lower allowance would have been made for capital in 1929 than in the subsequent depression years, that is, for equity capital. A. That is correct.

Q. With respect to that testimony, Mr. Symonds, would you not agree that the risk to investors for common equity capital during the depression was considerably greater than it was in the years of prosperity which preceded during the 1920's? A. I couldn't answer that categorically. I

(632)

can explain it; and that is, that I believe the risk in 1930 would have been greater but that the financial risk was far less because

633

prices in the depression had declined much more than the risk had increased.

Q. Do you make a distinction—

Presiding Examiner: Pardon me; when you say prices—

The Witness: Prices of equity securities had declined much more than the risk had increased.

By Mr. Spalter:

Q. Mr. Symonds, would you not say that the investors' attitude during depression years indicated that they considered the risk greater during those years than they did in the 1920's preceding that depression? A. The investors considered the risk greater, but they did so to extremes and over-emphasized that risk, and therefore expressed it in prices of equity securities which far outran the actual risk that exists; just as in boom years, they over-emphasized the enthusiasm for securities and outran the potential that exists therefor.

Q. Are you saying that the attitude of the investors during those past periods, either depression or boom, are not to be relied on in consideration of the risk he considers in investing his money in the securities? A. The investors —the prices realized by securities are evidence of the investors' appraisal of those risks, but that is not an appraisal of value, and it is only a particular spot in the market.

634

Presiding Examiner: Mr. Symonds, would it be correct to state that the pipeline's ability to get financing through

the sale of common equity stock would be affected by the investors' appraisal of the risks?

The Witness: Ability to get it?

Presiding Examiner: Yes.

The Witness: Not entirely, because sometimes money is just not available regardless of how necessary.

Presiding Examiner: Now, assuming that common stock money were available, would it be correct to say that the pipelines had only to raise funds through common stock financing would be affected by the investors' appraisal of the risk? A. That is one factor, yes, and appraisal of the particular companies' ability to turn those funds into long-term profitable investments.

Presiding Examiner: And assuming—

The Witness: —and the future anticipation of what those funds could do. That is—

Presiding Examiner: Yes, sir.

The Witness: —if the trend was upward, they would have less trouble, and, on the other hand if, like the railroads, the trend was down, there is no chance to get those funds.

Presiding Examiner: But let us assume for the purpose of this discussion, as you stated in response to a question

by Mr. Spalter a moment ago, that the investors' appraisal of the risk is actually not a completely educated appraisal, or an appraisal with which you personally would not agree; would it not be correct to say that the investors' appraisal of the risks, however good or bad it may be, still has a significant bearing upon the pipelines' ability to raise funds through equiyt financing?

The Witness: It is part of it.

Presiding Examiner: All right.

The Witness: Both the pure cost of money and the appraisal of risk are what create prices.

(635)

Presiding Examiner: All right.

Proceed, Mr. Spalter.

By Mr. Spalter:

Q. Turning to transcript page 134, Mr. Symonds, you there set forth certain principles with respect to compensation for common stock capital. Do you have that? A. Yes, I do.

Q. And you state at 134, beginning at line 7:

"The compensation for common stock capital consists of two elements, namely, cost of money, sometimes called the pure cost of money, and reward for risk. The cost of money to the U. S. Government is considered a good indicator of the pure cost of money and the yields on triple A Bonds is also considered a reliable indicator.

636

This pure cost of money has risen very substantially since 1950, hence the pure cost of money element in the cost of common stock capital has necessarily increased."

Have I quoted correctly, Mr. Symonds? A. You have.

Q. Now, insofar as your testimony is concerned and your appraisal of this situation, you consider this to be an important doctrine, don't you? A. Yes, I do.

Q. And it forms a basis for several parts of your Exhibit 13? A. Yes.

Q. Now, first I would like to ask you with respect to that quotation, and especially related to the last part of it, whether it is your testimony that you believe this is what ought to be the case or whether it actually represents the facts?

Presiding Examiner: When you say "this"—

Mr. Spalter: That is the latter part, stating. ". . . hence the pure cost of money element in the cost of common stock capital has necessarily increased."

Mr. Werner: What is your question now, Mr. Spalter?
Presiding Examiner: Read the question, please.

(The pending question, as recorded, was read by the reported.)

637

A. Yes, the pure cost of money as a component of the cost of equity capital has increased since 1950. The facts, I am sure, will bear me out on that.

Mr. Spalter, I would like to say that many other people hold this same opinion with me, and in my studies, to put this question to bed, I had reference to the proceedings of the National Association of Railroad and Utilities Commissioners in 1959 and to their comment on this subject.

I feel so strongly that it expresses better than I could that I would like to read that into the record and to adopt it as my testimony as support and amplification of what I said at page 134 of the transcript.

By Mr. Spalter:

Q. I am sorry; I don't know what you have reference to, what you want to read into the record. A. It is a quotation from the Corporate Finance Committee of the NARUC, published at page 91 of the 71st annual proceedings of that body,—

Q. Well— A. —and it deals with the elements of the cost of capital,—

Q. Well— A. —and it covers—

Q. —if you think it will throw any light on the position you are taking, I personally have no objection to your making

638

your answer as full as you think necessary, so long as you are answering the question. A. I think it is quite responsive, and I would like to so read it; because it is not long; it is less than a page.

Q. I have no objection, if the Examiner has none.

Presiding Examiner: All right.

The Witness: The quotation is as follows:

"The cost of debt capital has been increasing substantially in the post-war period and this trend continued during 1958.

"As has been discussed previously, debt costs have been increasing steadily and at the present time, midsummer of 1959, are in the 5 per cent to 5¼ per cent range.

"Equity costs are less easily determined. The drop in current earnings-price and dividend-price ratios to levels below debt costs and even Government debt costs, highlights even more than in previous years the need for the careful use and interpretation of these ratios in determining equity costs. No one will dispute the fact that equity, which bears the major portion of the risks of the enterprise, costs more than the relatively safe debt portion of the capital. The fact that current earnings and dividend-price ratios have been trending steadily downward since 1950 in the face of

rising interest rates made this Committee sound notes of caution on the use of these ratios in previous reports. With these ratios now below bond costs, your Committee's prior warnings have indeed been justified. It is clear that equity investors are not buying stocks for current yields but rather in anticipation of future increases in earnings, dividends, and prices which must continue if our economy is to grow at the rate which is required to meet the Russian economic threat.

"Equity costs are comprised of two elements, (1) pure interest and (2) compensation for risk. With the rising interest costs, the interest factor in equity costs has also risen. However, equities do provide an inflation hedge not

available in fixed income securities. Witness the switch from the latter to the former. It is therefore possible that the risk portion of equity costs may have declined. Determining the exact level of equity costs requires a great deal of analytical skill, experience and judgment: Time and space will not permit any detailed discussion of this matter in this report. It is recommended, however, that Commissions give utmost attention to the problem of equity costs."

I feel so strongly that that is better expressed than even my direct testimony that I would like to add it as

amplification thereof.

Presiding Examiner: Mr. Symonds, in your quick reading of that quotation, I notice that toward the end of the quotation there was a statement to the effect that the risk cost of equity may have declined. Will you read that again?

The Witness: It is half-way through the last paragraph: "Witness the switch"—meaning from—maybe I better read the whole last paragraph.

Presiding Examiner: Just read the part relating to the risk portion of equity.

The Witness: "It is therefore possible that the risk portion of equity costs may have declined."

Presiding Examiner: All right, now, I mentioned that because I noticed that in your prepared testimony on page 134 of the transcript, on line 15, you state, "It cannot be said that the risk element has decreased . . ."

Is your opinion at variance with that of the NARUC on that matter?

The Witness: I don't think so; no, I don't think they have declined. This quotation says it is possible that they have declined. I think I have gone on in my testimony in

subsequent pages to give our opinion that the risk costs, the amount of such decline, if any, has been negligible.

I refer to this quotation primarily because of the inclusion of pure interest costs, and this changes in risk securities.

641

I would adopt this statement as modification, but we go on to prove that any such decline in risk rate has been nominal, if any.

Presiding Examiner: Well, I take it, then, in your earlier statement that you would like to adopt the full quotation from the NARUC report as your position, you are now saying that you did not adopt it as totally your position with respect to the risk element.

The Witness: I would say I adopt it as amplification of my testimony on page 134. I hope I made that clear; if not, I would like to correct it.

Presiding Examiner: On page 134?

The Witness: On page 134.

By Mr. Spalter:

Q. Mr. Symonds, with respect to that testimony on transcript 134 and, if what you state in there, which I have given the name of a doctrine—I think you have adopted it as setting forth a doctrine—if that is correct as a statement of fact, isn't it also true that what you call compensation for common stock capital and the yields on high-grade bonds should always move in the same direction? A. No; compensation and high-grade bonds are one of the elements. The second element in the cost of common stock capital is the risk element; they do not necessarily move together, though the components would move—the component

642

of risk in a debt security, the component of risk in a common stock would move at the same rate. The cost of money would move at the same rate, depending on which way—they could move in different measures and, therefore, move in varying degrees. But, by and large, each component must be used at the same time, and combined to find the final answer.

Q. Would you explain your last answer, that they would not move in the same direction; that is, the yield on bonds and what you call compensation for common stock capital, in the light of your statement that the risk element in that compensation for common stock capital has not declined in recent years? A. I believe that there has been enthusiasm in the general business picture for common stocks in the last—certainly, with the exception of part of 1958, over the last five years there has been a great enthusiasm for common stocks, and that enthusiasm has carried over into, partly from fear of inflation, partly from fear of other things, into an appraisal of risk which differs from the pressures on the money market due to the demands, the long-term national and international demands for capital which has been expressed in the upward trend of money rates.

The enthusiasm for common stock investment, on the other hand, has fluctuated: at the present time, perhaps, not some stocks as against last fall, but certainly at the present time

643

we are in a high period of a stock market, which does not necessarily carry through as to a long-range appraisal of risk.

On the other hand, if events should take place which would destroy the enthusiasm or destroy the confidence,

whether it is a long series of strikes in industrial concerns, whether it is a change in regulatory policy, any of those things which destroy the basis on which that confidence exists, you could have a complete reversal of the risk factor and therefore a complete reversal of the cost of common equity money as contrasted to debt money.

Q. But in this period that you say there has been enthusiasm for common stock, has the compensation for common stock capital and the yields on high-grade bonds moved in the same direction? A. No, they have not.

Q. Just to clarify the record, Mr. Symonds, can you define just what you mean by compensation for common stock capital, or is that definition merely made up of the two elements that you talk of—the pure cost of money and the reward of risk? A. I would accept the second half of your question, that is, that pure cost of money and the reward for risk.

Common stock capital, therefore, becomes an appraisal of the risk and a knowledge of the cost of senior money.

Presiding Examiner: Mr. Symonds, in that sentence beginning at line 7 of page 134, the difficulty I have is with the word "compensation." Could you explain what you mean by that? You say the compensation common stock capital consists of two elements.

The Witness: When I say compensation, I mean "price"; the earnings that would result or be required to support the acquisition of common stock capital in the competitive market for a security.

Presiding Examiner: Well, in your last answer to me you started out to say price. Does that mean the same thing as the earnings required?

The Witness: Price and compensation I have used interchangeably; perhaps I am wrong, but I have used them in-

terchangeably; the price of common stock capital and the compensation for common stock capital.

Presiding Examiner: Read Mr. Symonds' answer to my previous question, please.

(The next to the last answer, as recorded, was read by the reporter.)

Presiding Examiner: Well, when you refer to the earnings that would be required to support the ability of the company to do equity financing, do you mean the same thing as the price at which the common stock would sell?

The Witness: No; you sell a common stock based on a

knowledge of what has gone on over the last—

Presiding Examiner: Yes, I understand that.

The Witness: —period of years and the knowledge of what they are earning at this time and a forecast based to a large measure on this history—

Presiding Examiner: Yes, I understand that.

The Witness: —of what they may do in the future.

The price or compensation that you are receiving for securities that you sell—

Presiding Examiner: Yes, I understand that.

The Witness: would be related to the earnings that you've got at that time, but the price itself would have taken into consideration the past record and the future potential.

Presiding Examiner: All right, let's go back again, then, to your sentence beginning on line 7 of page 134 of the transcript.

When you say, "The compensation for common stock capital consists of two elements," and so forth, do you mean simply to state there that the price, the market price paid by the investor, is determined by the two elements; namely, the cost of money and the reward for risk?

(645)

The Witness: Yes, because what I have tried to say is that the reward for risk is judged by the factors which I was giving you.

Presiding Examiner: All right, I just wanted to make

646

clear what you were saying.

Mr. Spalter: May we have the Examiner's last question and the witness' answer read?

Presiding Examiner: Yes.

(The last question by the Presiding Examiner and the answer thereto, as recorded, were read by the reporter.)

By Mr. Spalter:

Q. Mr. Symonds, that may be a little difficult to understand in the light of your discussion. I wonder if you could set out how you would show this compensation for common stock capital as an available or unavailable statistical data? A. Would you say the items that we would consider when we were negotiating for the sale of common stock or the addition of common stock capital to our picture? I mean conditions that we would use.

Q. No, it is the term that you use, the compensation for common stock capital, that I would like to have shown in available statistical data. A. I would answer you, I think, this way, Mr. Spalter.

I would say that we would first set out what the cost of senior capital would be—

Mr. Spalter: Excuse me; may I get that first part?

Presiding Examiner: Read the answer, please.

(The last answer, as recorded, was read by the reporter.)

647

Mr. Spalter: Thank you.

The Witness: That, after we had set that down, we

in the case of Tennessee, two facts which entered into it: (1) the consistency of regulation and the amount of return that could be reasonably expected by a continuation of consistent regulation as to the regulatory portion of the business, and the earnings that results therefrom: (2) the earnings that resulted from the unregulated portion of our business, which, as you know, is some 30 per cent of our total business.

Those together apply to our capital structure, and generally, those things would be set out in statistical tables—would give us a knowledge of the basic facts. Against would then look at the past record of the company and, these facts we would apply the current market price and would determine whether we could afford to sell common equity, if we had a choice, and from that point, we would then look at the market and decide whether we thought we were getting a fair value for that equity at the time. If we were, we would negotiate for the sale of the securities. If we weren't, I don't know what we would do.

By Mr. Spalter:

Q. Now, getting down to the last part of your answer where you said that you would determine fair value for the equity at the time that you proposed to issue it and if you thought it was fair you would go into the market: if not, you

did not know what you would do— A. Yes, sir.

Q. —is that fair value for equity that you now talk about, the compensation for the common stock capital that you refer to in your testimony? A. Yes. Having given consideration to all the elements I mentioned, it would be the compensation for common stock capital, in that it is the price realized and, therefore, the earnings and the dividends that we are giving up to attract that capital.

Q. Simply stated, then, it is the relationship of the price to the earnings on that security, is that correct? A. Giving consideration to the past record, the future potential, the consistency of regulation, the success of management in the unregulated business; all of these things put together comes out to a final answer; but they cannot be taken piece by piece; they've got to be taken as an entire package.

Q. Mr. Symonds, referring back again to transcript 134, could you state for the record what you had in mind with respect to the second element, the reward for risk; what risk you had in mind or what reward you felt was necessary for such risk? A. You mean in numerical terms?

Q. First, if you have it by elements of risk, and then

649

if you have it by numerical terms, we would be interested in it. A. I don't have it by numerical terms.

As to the elements of risk, it is the record of the company over the years; it is the—

Q. I would like to confine it to Tennessee. A. All right, the record of Tennessee over the last ten years, the consistent ability to earn money, the current position we find ourselves in, the future earnings of the company based on a continuation of those positions, the consistency with which we have had all of our rate matters before this Commission established; that is, the record of this Commission in consistency in rate practice which has contributed greatly to the investment status and which can be destroyed, if it is varied from; the success of the management in its unusual activities—I mean it's not unusual; I mean its unregulated activities, which, if it had been unsuccessful, would also have destroyed our credit.

In other words, it is a combination of all those things which come into determining what the amount of risk is and what the purchaser of common stock is willing to pay as to the company—how much they are willing to

give the company as a reward for such risk—I mean—or compensation for such risk, if you want to use that.

I can't emphasize it too much. If a company has bad management and does badly, it loses its investment standing.

650

If a Commission changes its form of rgulation radically, you could throw the whole gas industry back into the same position the electric industry was in 1935.

In other words, consistency in these things, in good management, consistency in regulation, are extremely important to the investment quality of a business and to the appraisal that the market will give to this risk factor.

Q. Well, having enumerated all these, Mr. Symonds, would you say at present day that there is any risk or any great risk in investing money in Tennessee? A. I would say there is great risk in investing money in Tennessee, which is to be determined by these appraisals.

Now, Tennessee today has had a series of very fortunate actions on the market. We have been extremely fortunate in some of our activities. The market today says that we will continue that fortunate trend of events and that we will be able to convince the Commission that they should stay on a consistent pattern as to past regulation. If either of these things were not paramount in the investor's mind, our stock would not sell where it is today.

Presiding Examiner: I don't understand that last part of your sentence, Mr. Symonds. You say the market today says that Tennessee will be able to convince the Commission to do something or another. Are you suggesting that the prices which investors—well, first, Tennessee is not floating any

651

common stock issue at the present time.

(651)

The Witness: We did in February; we are not doing any today, but it is trading every day on the market.

Presiding Examiner: Yes.

Are you saying, then, that the market prices at which Tennessee common stock is being sold today reflect, to some significant extent, an appraisal by the investors as to what kind of a decision the Federal Power Commission may write in this docket?

The Witness: Yes, I think so; I think they are expecting this Commission to be consistent. And if they did not expect this Commission to be consistent, the prices would be selling at half.

Presiding Examiner: Perhaps we ought to have the investors participate in this proceeding.

The Witness: I think, to me—Mr. Examiner, I think through me, with over 100,000 stockholders, they are participating to one degree or another.

Presiding Examiner: All right.

By Mr. Spalter:

Q. With reference to your statement that there is great risk in Tennessee today in investing in Tennessee today, are you familiar with the Value Line Investment Surveys? A. Yes.

Q. Are you familiar with the report that was issued

652

March 21, 1960? A. I don't believe I am; I have seen that one; but I am generally familiar with it. I would be glad to examine it.

Q. Well, it is the one covering the gas industry.

(Hands document to witness.)

The Witness: I haven't seen it.

By Mr. Spalter:

Q. I would refer you to page 867 of the report which your counsel handed to you: and that sets forth the evaluation by this survey of Tennessee Gas Transmission Company.

First, let me ask you, Mr. Symonds, this is a report of considerable weight in the stock market and in financial circles, is it not? A. I would say it is one of the good reports; I mean there are many that are used by investors, but this is one of the good ones.

Q. And it carries considerable weight? A. I would believe so.

Q. Now, is it not a fact that at page 867, the quality grade given by this report to Tennessee Gas Transmission Company stock is "A"? A. That is right.

Q. Are you aware that it is the only pipeline stock that is thus graded by Value Line? A. I am.

653

Q. I would refer you to the paragraph on that page 867 which indicates the Value Line "advice," so to speak: the heading before that pargraph is "Advice," which states:

> "Tennessee continues to represent a sound defensive holding in a generally overvalued and uncertain stock market."

In the light of that evaluation, do you think there is great risk in investing in Tennessee today? A. Yes, I do. If this Commission should change its consistently past policy, this price could be cut in half, and that rating would go to a negative rating, a "C" rating, probably. And this rating is based on the consistent growth that you see set forth at the top of this page. And the consistent growth, both in the regulated and the unregulated field, which have been possible under the past record of

(653)

this Commission and with our success and energy, let's say, in the regulated field and our success as well as our energy in the unregulated field, we have created this rating. It can be destroyed over night if either of those things go wrong.

Q. Well, you are basing your conclusion that there is great risk in investing in Tennessee solely on the possibility of change in what you call a consistent policy of this Commission? A. No, that is one factor. The other factor is, if we should fall on our face, if we should have a series of dry

654

holes, if we should make bad investments in refining and marketing, if we should do those things, we would lose our investor confidence and our standing over night.

. . . . . .

659

Q. Mr. Symonds, turning to transcript 138, at lines 10 through 14, and as you indicate in that testimony, you also refer to page 21 of your exhibit, and you are there pointing to the capital structure you anticipate Tennessee will have as of September 30, 1960. Is that correct? A. It is.

Q. Now, in arriving at that capital structure, you indicate, at the bottom of transcript 137, that you have adjusted the original 4.50 per cent convertible second preferred stock as being all converted into common equity, is that correct? A. That is correct.

Q. I think as you indicated on the record yesterday, as of today that is not a fact as yet. A. No, only 56 per cent has been so converted.

Q. Now, with respect to that stock it was issued on February 28, 1956, was it not? A. I will accept that. I think so. I will accept it subject to check.

Q. I refer you to Exhibit 11, I think it is. A. 1956 I think is right. It is the first issue.

Q. I refer you to Schedule D of Exhibit 11, line 16. A. Yes, that is correct.

Q. Now—

660

Presiding Examiner: I take it February 28, 1956 is correct.

The Witness: That is correct.

By Mr. Spalter:

Q. While you have your eye on that Schedule D, Exhibit 11, Mr. Symonds, Lines 17, 18 and 19 of second preferred have all been converted now, have they not? A. That is correct.

Q. And line 20, the most recent issue, has not been converted to any extent at the present time. A. Well, line 20 has not been converted. It is not the most recent issue, because the record shows that in November of 1959, subsequent to this exhibit, we sold another issue. But you are correct that line 20 has not been converted. The 4.72 has not been converted, nor the 5 per cent which was issued in November of 1959 has not been converted.

Q. Well, let me ask you first with respect to these issues—is there a waiting period before conversion can be applicable to them? A. No, there is not. Basically, as a matter of negotiation, we have tried to set the conversion rate as high above the then current market of the stock as is possible, and practice or tradition or market conditions, whatever you want to call it, would say somewhere between 10 and 15 per cent over the current market. Therefore, there is a practical waiting period

661

before it is profitable for the investor to convert. But there is no legal waiting period.

Q. In the light of your last answer with respect to a practical waiting period, do you think your estimate is correct that the remaining 44 per cent of outstanding 4.50 convertible second preferred would be converted by September of this year, whereas it has taken now almost—well, it has taken more than four years to convert the first 56 per cent. A. Yes, I think it is going to be converted, because the stock now, since it is convertible into common right at $29 a share of common—the stock is selling at around—the $4.50 per cent convertible second preferred stock is selling around $125 in the market today, and it is the intention of the company to force the conversion by calling that stock, and if we do so, it will all be converted, because—except maybe a very few shares that forget.

Q. When do you propose to issue the call, do you know? A. We have been trying to get some of this current business behind us. I would expect to issue it this summer sometime. We do not want to issue it too close upon the heels of our last registration statement for common—that is all.

Mr. Spalter: May I have the first part of that answer read, Mr. Examiner. I am just wondering whether Mr. Symonds misspoke himself with respect to the stock that he had reference to.

(The reporter read from his notes as requested.)

662

Mr. Werner: Mr. Spalter, may I ask a question here in connection with just the thing you are talking about. It may be helpful. I thought it might be well if the witness, if he knows, at this point would state what price the 4.5 per cent second preferred is callable at.

The Witness: I think it is callable at—I don't know. I think it is $105 or par. I would have to go back to the indenture. It is four years ago, Mr. Werner. It is callable close to par, however.

Mr. Werner: In other words, the callable price would be less than $125.

The Witness: Much less.

. . . . . .

664

Q. Now, just for clarification, you referred to the fact that you had proposed to issue 1,500,000 shares of common stock at proceeds of $52,500,000. The proceeds from your last issue were in fact $52,400,000, are they not? A. I think that is right. It was $1.75 off of 34.50, less expenses.

. . . . . .

668

Q. Now the result in Column 8, or the totals that you derived in that column, you claim to be an adjusted allowance on common equity, adjusted for the increases in average annual bond yields? A. We entitled it "Allowance on Equity Adjusted for Increases in the Pure Cost of Money" arrived at in the manner

669

you have just interrogated me on.

Q. Are you implying by your last answer that there ought to be a further adjustment giving effect to something other than what you call the pure cost of money? A. No.

Q. Then in effect you have an adjusted allowance on common equity in that column? A. Yes.

Q. It is not your contention that the Commission has in fact allowed or determined that such is the allowance on common equity for each of these companies, as you show in Column 8. A. No. We have adjusted what the Commis-

sion did allow in the years 1950 through 1957, and have adjusted it in accordance with the difference between the best index we could find of pure cost of money in each of those years to bring them down to comparable current conditions.

Q. Well, let me turn to the first one just for example purposes. Are you implying by the figure that you show in Column 8, for Northern Natural Gas Company, in the amount of 11.12, that Northern Natural Gas Company actually today is earning 11.12 percent on its common equity? A. I don't know what they are earning. What I am saying is that in 1950, when the Northern Natural Gas Company, with an equity ratio of 44 percent, as shown in Column 4, had a case

670

decided by this Commission, an allowance of 9¼ percent was made on that equity. That in the light of the increase in cost of—pure cost of money, as reflected by the calculations in Columns 6 and 7, the Commission, following the same consistent policy, would have allowed, in my opinion, under those conditions, a return of 11.12 percent all other conditions being the same. The case was decided, you see, 10 years ago, and money conditions were different at that time.

Mr. Spalter, if I may amplify what I have been saying, just a little bit, I would like to point out that Table 22 should be considered carefully in connection with the chart on page 23 of this exhibit. What we are showing is that there has been remarkable consistency in the pattern of regulation by this Commission. We have made the allowances in page 22, as shown in Columns 6 and 7, but the line one page 23 would be practically the same if those allowances were not made, because when I speak of consistency of regulation by the Federal Power Commission, I speak of a pattern like that shown on page 14 of Exhibit 13 in

lines 3 and 8, showing that throughout the years there is a consistency in the Federal Power Commission's allowance of equity to Tennessee, that that consistency goes with the amount of equity that it has had at each of those Commission decisions. And we are showing by pages 22 and 23 that this same consistency has applied to

671

all companies that we could find, with the two exceptions which I have already commented on, and as set forth by the chart set forth on 23.

In other words, there has been no bouncing around or flippancy to the regulation by this Commission. It has followed a standard pattern, based on the proportion of equity. And it has been remarkably consistent in relating that pattern to the amount of equity over the years. It is that reason that the gas companies enjoy the investment rating today. And departure from that standard of consistency will destroy their credit, or give us a bonanza if that should happen. Either would be bad.

Q. Well, with that extended remark on your part, Mr. Symonds, isn't it a fact that the presentation on page 23 shows a consistency that you indicate under the concept that you are espousing and testifying to in this proceeding? Isn't that correct? A. Yes, it is. I would like to point out that if you took the adjustments in page 22 out of the figures on 23, the line and the consistency would still follow, if you wanted to make the chart that way?

Q. Mr. Symonds, is there any indication in the opinions that you have reference to on page 22 of your exhibit that the Commission has used your concept of the pure cost of money in arriving at the return on equity for each of these

672

companies? A. No. I think the Commission has considered the cost of capital to each of those companies which has

(672)

been a factor in each of these cases, and has varied with these cases. As an example, I happen to know that the cost of debt on the Northern Natural Gas Company is much lower than the cost of debt on the El Paso Natural Gas Company. The equity on Northern is much thicker than it is on El Paso. And, therefore, I think that has been reflected in the return allowed by the Commission. I think, therefore, they have unconsciously perhaps, but they have recognized it just the same.

Q. Well, let me ask you one further point with respect to your adjustment as shown on page 22.

Let us assume that Moody's Triple A utility bonds in 1959 stood at an average of 7.49 instead of 4.49. Would you then have increased your adjustment in Column 8 by an additional 3 percentage points in each case? A. I would, because if I didn't then I would be completely prohibiting my ability to go to the capital markets and meet service requirements' and I would be stopped—I wouldn't expect to be granted that—but if I didn't get it I wouldn't be able to finance.

Q. Now, Mr. Symonds, in this proceeding, you are indicating that the Commission ought to continue the policy which you claim, this consistent policy you refer to, at

673

page 14 of your exhibit, and that a 7 percent rate of return at this time for Tennessee would allow a 12.78 percent return on equity. Isn't that the conclusion in your testimony? A. That is correct, yes.

Q. Now,— A. I might say that that would be a 12.78 percent return on 30 percent equity, which we have never enjoyed in any of these previous cases. You see, the equity in Tennessee is thicker today than it has been in the past, and even, as I pointed out yesterday in my cross-examination, if you deduct the 4.50 preferred stock as of September 30, 1960, from the equity, you would still have a 28.84

percent equity and the return requested by or afforded by a 7 percent return would be 13.24 percent. I believe you will find that our request is consistent when you consider the amount of equity which we have invested in the company, and the steps which we have taken pursuant to the admonitions of this Commission to beef up our equity—I think that would be consistent in this case with page 14 of Exhibit 13.

Q. All right. Now, if you will take a look at page 22, and omitting the last line, which refers to Tennessee itself, isn't it a fact that your 12.78 percent return on equity would be greater and in some instances considerably greater than that allowed by the Commission for any other of the 10 companies except one?

A. I will agree with your figure, because the tenth company which you refer to is El Paso, which, in 1953, had a 19 percent equity ratio, and were allowed 14.4 percent. Every other company in that list, except Colorado Interstate, which was a decision in 1957, had equity running from 31 percent to 52 percent. And I believe that if you would take our request in this hearing, adjusted or unadjusted, so long as you treat them both the same, and put it on the chart on page 23, you will find that it is consistent with those past actions.

Q. Well, am I correct in understanding your testimony, then, that you are indicating to the Commission that they ought to give you a return on equity greater than those indicated on page 22, solely based on the percentage of equity to total capitalization that Tennessee has in relation to the percentages of equity to total capitalization of the other companies? A. No, that is just one thing. The other thing is that the money rates, cost of money today—that is in 1960—is higher than at any time for any of the decisions

(674)

set forth in page 22. And I say that there must be two—first on the proportion of equity, and second, as to the level of money rates today.

Q. Now, as to the cost of money, the adjustment is indicated on Column 8, isn't it?

675

A. That is the return plus the adjustment in Column 8.

Q. The return plus the adjustment? A. Yes. You see the adjustment varies, Mr. Spalter, as we prepared this table, by the—by an adjustment for the year in which the decision was granted. Each of the figures in Column 7 is different, or at least I think they are all different—a couple of them are the same because the decisions were in the same year.

Q. Well, let me clarify this Column 8 to this extent. Aren't you saying in Column 8 that if the Commission today decided each one of the cases you have listed, that based on its practice and its reasoning in the opinions as set forth for those companies, those companies would be allowed as return on equity the percentages shown in Column 8? A. That is correct.

Q. Now, with that in mind, isn't it a fact that Tennessee today is nevertheless asking the Commission to give it a rate of return greater than 7 of the companies, at least—you indicate for Colorado Interstate it would be 12.82, which is similar to your 12.78, and for Panhandle it would be 12.91, which is also similar to your 12.78. The only one that would today get a greater return on equity would be El Paso Natural Gas Company. Is that what your presentation amounts to to the Commission? A. Partially. I would have to explain it again. For

676

instance, you take Panhandle Eastern. They are getting a return, as shown in Column 8, of 12.91, based on their

1952 rate case, and a 32.6 percent equity ratio. Tennessee is coming into this rate case with stronger equity than we show in any other case, as shown by page 14 in this exhibit; but we still have between 28.84 and 30.15 percent equity, or less than Panhandle, who, on this adjusted basis, would be getting substantially the same rate of return. You have got to take the two together, Mr. Spalter, and that is what I am trying to point out. And that is why we have considered page 22 in relation to a chart position on 23 which indicates the consistency of the Commission.

Q. Well, what I am trying to button down is the fact that you are indicating to the Commission that it is appropriate that you get a 12.78 percent return on equity, although it is higher than the returns in Column 8 as indicated. A. As calculated, I think that the conditions surrounding Tennessee would require a 12.78 return on equity, yes.

Q. And that is due solely to the relationship of the equity percentage to the total capitalization? A. Yes. If I had 40 percent capitalization, I would not ask for 12.78 percent on equity. But my rates would be higher if I had that.

Q. Mr. Symonds, referring to page 14 of your exhibit, it is indicated there, is it not, that at September 30, 1946,

your ratio of common equity to total capitalization was 27.75? A. Yes.

Q. And at October 31, 1959, the ratio stood at 27.08, if you included the total of the 4.50 series of convertible second preferred? A. That is right.

Q. As a matter of fact, if you excluded the unconverted portion as of that date, the ratio of common to total capitalization would be a lower percentage, would it not? A. If the 4.50 second preferred stock had not been con-

sidered as common equity on October 31, 1959, the return to common equity would have been 15.10 percent.

Q. What would have been the capital ratio? A. 24.77 percent.

Q. Now, in the light of the fact that in the intervening period between September 30, 1946, and October 31, 1959, you have earned a return on equity that each period shown in excess of 14 percent, would you say that you have followed a policy whereby you have derived at this time a more conservative capitalization of your company than you had at the time you started out in business? A. To a slight degree. But in order to market securities, we have had to pay out 70 percent of our earnings, and the remaining—and maintain a constant dividend payout, and in

678

doing so, we have had to go back to the market again and again for securities. And while I would say the securities are somewhat more conservative today, I think the figures on them will speak for themselves. I don't feel that we have deliberately gone completely conservative, because we have kept our capital structure very much in balance over the years.

Q. Well, in fact it has deteriorated a little bit, hasn't it? A. It deteriorated a little bit up to October. In fact, it deteriorated quite a little bit during the interim periods of '53, '54 and '55, and the Commission called it to our attention, and we have been actively trying, as the markets will permit, to build it up, using to a large extent the device of second preferred stock, but also selling common stock in the market.

Q. Well, is it correct to conclude that your capitalization is today no more conservative than it was on September 30, 1946? A. It is more conservative, because our equity ratio today is over 30 percent as against 27.75. It is more conservative.

Q. You nevertheless anticipate that as of September 30, 1960, it will be closer again to 28 percent? A. The figure of 27.08, on October 31, 1959, that is line 8 of the second set of columns, would be the comparable—the

679

comparable figure would be 30.15 on September 30, or if you exclude the second preferred stock it would be 28.84.

Q. Which, again, would bring you within the same range that you were on September 30, 1946? A. Well, it is 10 percent better. 10 percent on top of 27.75 would be a little over 30. 10 percent more would be 30.42. In the meantime, we have raised a lot of debt money in order to maintain the service that we have been called upon to maintain.

685

By Mr. Freeman:

Q. Mr. Symonds, at transcript page 119, you testified that the higher cost of senior capital in 1959 "has put the squeeze on the net income available to the equity shareholders."

You will agree with me, wouldn't you, Mr. Symonds, that you were there referring solely to the percentages in your testimony and not to actual dollars?

686

A. I don't have—if I have it I cannot find it—the actual dollar cost of interest during 1959. But I believe it increased actually as well as percentagewise.

Q. But there was no squeeze on the net income available to the equity shareholder in 1959? 1959 was a good year for you, wasn't it? A. Because of—a large part of which was due to our unregulated activities. But it was not a

good year for us as far as our regulated activities were concerned.

Q. But as to the equity shareholders, the earnings per share in 1959 for the company was $1.93, was it not? A. It was.

Q. It had gone up from a figure of 91 cents in 1950, the base year to which you have referred in this proceeding, up to this figure of $1.93, is that not correct? A. That is correct.

Q. Well,— A. We spent a great deal more money for regulated plant and have earned thereon, and we have spent a great deal of money for unregulated activities, which have contributed materially to our net earnings available for common. Non-regulated earnings, at least up until now, have not been a part of this proceeding.

Q. But you were able to maintain the dividend policy that you had contemplated during 1959?

A. We maintained our dividend policy, yes, and our actual dividend.

Q. In answer to Mr. Spalter this morning, you testified that prior to going into the equity market you considered various factors to determine whether you could get what you termed a fair value for the stock that you offered, is that correct? A. I did.

Q. And you assume that you made such an analysis prior to your February 1960 issue of stock? A. We are continually making such analysis.

Q. And you made one prior to that issue— A. You mean was a specific formal study made? No, we did not. We never make it in the form of a specific formal study. It is a running study at all times.

Q. Your testimony in response to Mr. Spalter, then, is to be taken—instead of making a specific study, you

make a continuing study, and that you continually have these factors under consideration, is that correct? A. Continually, yes.

Q. And you had all these factors available to you before you went into the equity market in February of 1960? A. Yes.

Q. And do you consider that the proceeds from that sale represent fair value to the company?

688

A. Yes; I do. If I had not, I would not have made the sale.

Q. Was that issue of stock quickly absorbed, Mr. Symonds? A. Yes. We had a very—

Q. Was it oversubscribed? A. I don't have the subscription books of the company, but I believe there could have been considered to be a modest oversubscription. But it was not offered for subscription. It was an underwritten offer.

Q. Was the stock quoted at a premium on a when issued basis?

Mr. Werner: May I have that question?

(The question, as recorded, was read by the reporter.)

The Witness: No. As soon as our registration statement became effective, the underwriters stabilize the price, or it probably would have sold at a discount. And there was a substantial stabilizing operation to the best of my knowledge for several weeks in connection with that offering, which meant that if it had not been stabilized, it would have been selling at a discount.

By Mr. Freeman:

Q. Your stock is now selling at a higher price than the—
A. Oh, yes. But we have had several very favorable

developments in our business since then.

Presiding Examiner: I am not sure your question was finished, Mr. Freeman. At a higher price than what?

Mr. Freeman: A higher price than the price received from the February 16 sale.

The Witness: Oh, yes. You see since the February 16 sale we were very successful in our Louisiana offshore bidding, the extent of our development of our Louisiana offshore operations has been very successful. We have found a major oil field in the Argentine. The unitization in Venezuela has been completed, and will be paid out there before the end of 1960. All these facts are known today, and have a great bearing on common stock prices, which were not available to us on the 16th of February.

Presiding Examiner: Mr. Reporter, read the opening part of Mr. Symonds' statement.

(The reporter read from his notes as requested.)

Presiding Examiner: You mean drilling?

The Witness: Bidding. There were sales on the 24th of February both for State and Federal lands, leases, and we were successful at that bidding.

Presiding Examiner: Thank you.

The Witness: We also had development drilling going on at the same time. But I referred to the bidding as an impact item.

. . . . . .

691

Q. Well, since you testified that the cost of equity is made up of two factors—one, the pure cost of money, and, two, the reward for risk,—isn't your characterization of enthusiasm of investors merely another way of saying they are willing to set the risk at a lesser reward? A. Provid-

ing they are looking at the future, and what they expect to get. And if you destroy the basis on which they can look into the future, and destroy the basis for that confidence, you will completely destroy that ratio. And, therefore, I think the ratio itself has no value.

Q. For whatever reasons the investing public has, your characterization of this enthusiasm really means that under the circumstances they are willing to accept the risk at a lesser reward. A. At that one particular minute, based on all of the facts known to them at that particular time. But the next minute it is gone. And if you change any condition, you either

692

destroy or give a great bonanza.

Q. But at a particular time, with a given set of circumstances, that is true, is it not? A. Limited as I have testified I would say so.

. . . . . .

696

Q. In the page of the value line investment survey, which has been identified on the record as Exhibit 19, Tennessee was the highest rated natural gas company—natural gas pipeline company. I take it that you don't take issue with this conclusion, do you, Mr. Symonds? A. No, sir.

. . . . . .

701

By Mr. Harkins:

Q. Today, as a large corporation, with a substantial growth record, do you believe that your corporation represents a lesser credit risk from an investment point of view than a new company that is about to enter the

natural gas transmission business? A. A lesser credit risk, yes.

Q. Thank you. Is it true that the larger the company the less risky it will appear to be to the investor? A. No.

Q. Well, then, let me rephrase my question this way: It a company one tenth your size were to float an issue of bonds for $4 million, and you were to float an issue for $40 million, and assuming that they both have equal markets and in all other respects they are equal, would not your company have a better credit rating than the company that is only

one tenth your size?

Mr. Werner: Excuse me. May I have that question read back? I didn't understand it.

(The question, as recorded, was read by the reporter.)

Mr. Werner: I will object to it.

Presiding Examiner: I don't understand the assumption.

Mr. Harkins: It is purely a hypothetical question, rephrasing my original question when I said is it true the larger the company the less risky it will appear to the investor.

Presiding Examiner: The trouble is the purpose if your last question is to try to get Mr. Symonds to accept a point which he was not willing to accept a moment ago—I don't see the value, unless your hypothetical question is based on some reasonable assumption.

Mr. Harkins: Well, Mr. Examiner, I feel he must have misunderstood my original question or what it was intended to bring out. It seemed to me pretty axiomatic that a large company generally does have a better credit standing when they are going in for relatively the same amounts of capital.

Presiding Examiner: All other things being equal?

Mr. Harkins: Yes. And he said no to that. And I was rephrasing it in a very precise mathematical way so he would

703

be certain he understood the question.

Presiding Examiner: Assuming for the moment my hypothesis, would the answer be yes?

The Witness: The answer would be no. In today's money markets, I could sell a 4 million issue of bonds under those conditions much more readily than I could sell a $40 million issue of bonds.

. . . . . .

Q. Your company, in the last five years, has tried to go off into many diverse fields of endeavor, has it not? A. No. We have stayed entirely, so I can clear up your mind on this subject—we have stayed entirely in the exploration, production, refining, marketing, transportation,

704

and conversion of hydrocarbons, and two service companies, largely serving our own facilities. And that is the entire diversification that we have gone into. In those fields, we think we have been completely consistent.

Q. Well, I was glancing through your 1959 annual report. I believe that you have mentioned that you had an insurance company, did you not? A. Yes, sir. It was started in 1950 to service our own retirement income plan. It has since broadened out into other servicing of collateral accounts similar thereto. Its principal business is still to service our own account.

Q. Well, then, if I may read directly from your 1959 annual report, you say—

Mr. Werner: What page?

Mr. Harkins: Page 18, the second paragraph, Tennes-

see Life Insurance Company. "During 1959, Tennessee Life wrote new group life and accident health insurance plans for the employees of 60 commercial and industrial firms. This was in addition to the coverage it provides employees of Tennessee Gas and associated companies under retirement income and medical insurance plans. A financial report of this non-consolidated subsidiary will be mailed to any stockholder upon request."

The Witness: My statement still stands.

705

By Mr. Harkins:

Q. Thank you. Then there is Ten-Ten Travis Corporation. It owns a 22 story Tennessee building, with a 1500 car public parking garage. A. It operates the 22 story office building where we maintain our offices. The building is owned by Tennessee Life Insurance Company. It owns and operates a parking garage which is adjacent thereto in conection with it. It again meets this test of a serivce corporation that I just recited.

Q. Then I believe you have a Grand Central Rocket Company? A. No, we do not.

Q. Well, it says, "A subsidiary of Petrotex Chemical Corporation, with headquarters and plant in Redland." Do you own Petrotex? A. We own 50 percent of Petrotex Chemical Corporation.

Q. And this Grand Central Rocket Company produces and conducts research in solid propellant rocket motors and high energy solid fuels for rockets? A. That is right. It is an adjunct of the Petrotex business, because all of the mix and a great deal of the binders in those things are hydrocarbons and hydrocarbon base materials. It goes under the heading of my conversion of hydrocarbons into higher uses. My statement still stands.

Q. And all these efforts have taken place in the last six years or so?

706

A. We started to go into the production business some 10 years ago. We have been getting into it just as fast as we can.

Q. Thank you. Isn't your company a greater risk for having gone into South America, where the political climate is quite uncertain?

Mr. Werner: May I have that question read back?

Presiding Examiner: Read the question.

(The question, as recorded, was read by the reporter.)

The Witness: I would have to say no. Our investment in Venezuela will be fully paid out this year, and we probably have 25 years of production history ahead of it, which will all be profit. Remember, when you go into this oil and gas producing business, you have either physical or scientific or political risks. You judge a combination of all of them. In our judgment, South American has been an excellent place to invest money, based on a balance of all three of these risks. We are very happy with our experience down there.

. . . . . .

708

Q. You have testified, I believe, that the relative increase in the cost of gas in relation to other fuels has made Tennessee a greater risk than it was at its inception. Is

709

that not so?

. . . . . .

Q. Now, that risk, is that the primary risk that your company faces?

. . . . . .

710

The Witness: No, I wouldn't say that is the primary risk. I say the primary risk is a combination. It would be partly that and partly a fear on the part of the investor as to the standard of regulation that will be put forth by this Commission. In other words, whether this Commission will maintain the same consistency in the decision in this rate case as it has in decisions in the past, as to return on equity, and if that capital cast of common would be judged by the two of them. The risk to the investor today, and in the near future, will be the return to equity on the amount of money and the waiting period that will be encountered in its investment in the equity or in the common stock capital cost of this company.

711

The price of gas to the consumer, and the possible leveling out of the demand factor for gas as a commodity, would have a bearing only upon the rate of future growth. To that extent, it would be one of the risks, but it would not be the primary one.

By Mr. Harkins:

Q. I see. Let me ask you this, then. Maybe it is your position that there is no primary risk. Is that true? A. There are many risks. There is no one risk that stands out above all others.

Q. But, evidentally, the regulatory risk is a greater risk than is the risk that you face from the competition of other fuels. A. In the near future, yes.

Q. Thank you.

Doesn't your competition with other fuels vary from one part of the country to the other? A. Yes.

Q. Thank you. In other words, isn't the risk attributable to your company's transmission business—again, I am

referring to this risk with other fuels—dependent upon the areas into which your company has expanded? A. To the extent there is variation between the competitive pricing of other fuels, yes.

* * * * * * * * * * *

718

The Witness: As to 70 per cent of our business, I would put it in a public service corporation—that is a gas transmission company, subject to the Natural Gas Act. It has certain utility characteristics, certain others that are not utility characteristics. As to 30 per cent of the business I would put it as an explorer, producer, refiner, marketeer, converter of hydrocarbons. In other words, I would put it in the oil business.

* * * * * * * * * * *

720

Q. O.K. Well, let me ask you this question. Did you this morning say that bad management would affect the rate of return? A. Yes, I did.

Q. Does bad management affect risk? A. Yes, very definitely.

Q. Did you not list this among the risks that you consider to be part of the overall total sum of all the risk that would justify this rate of return in excess of the purchase cost of money? A. I did.

Q. So then would it not be a consequence of this that if you had bad management, then you would have to have a higher rate of return to maintain the same price on your stock, and to issue the necessary bonds at the same rate, and so forth and so on? A. I certainly say it. And that is why I don't believe the earnings price ratios, which must have an element of risk in them, have any bearing in determining the rate of return to be allowed.

* * * * * * * * * * *

724

Q. Now, Mr. Symonds, would this not be a fair statement. One of the beauties of preferred stock is that it allows you greater leverage on the common without undermining your bond credit rating.

* * * * * * * * * *

727

Q. In Company A you have 25 per cent of your capitalization in the form of common stock, 25 per cent of it is in the form of preferred stock, 50 per cent of it is in the form of bond money. Now, in Company B you have 25 per cent common, no preferred, and 75 per cent bonded money. Now, would not Company B represent a greater risk to a puchaser of a new issue of bonds than Company A? A. Yes.

* * * * * * * * * *

738

By Mr. Plaine:

* * * * * * * * * *

741

Q. The last question I have is a general one, and that is would you say that Tennessee Gas Transmission's tie-in with Canadian gas reserves, through your subsidiary, makes Tennessee Gas Transmission attractive from an investor's standpoint? A. I would have to say that by and large yes, that the actual gas that wil leome into the Middle Western system through the certificates authorized by this Commission and the Canadian Energy Board will give us an attractive subsidiary in Midwestern, after the third year. For the first two years, it will not be a net contributor to earnings at all.

I would expect that from an operational standpoint, the connection at Niagara, which is directly with Tennessee, will be more valuable for operations and continuity of service than it will be a net contributor to income, if such a connection is authorized by the Federal Power Commis-

sion. The Niagara connection has been authorized by the Energy Board. It has not been authorized by the Federal Power Commission. Midwestern has been authorized by both of them. It would be hypothetical or problematical, but certainly continued access to those Canadian reserves on the long run should prove of value to Tennessee.

. . . . . .

742

By Br. Bomar:

. . . . . .

743

Q. Now, do I understand the position of Tennessee in this record to be that it is not only claiming at 7 per cent return on its production—on all of its properties, including its production properties, plus the phantom tax benefits that would accrue from the intangible well drilling costs and the statutory depletion allowance? A. That is right.

Q. That is the position? A. That is the position.

. . . . . .

745

Mr. Werner: Assuming we get into an interim decision on rate of return. I don't think the Commission has to know at that time the amount of the so-called phantom tax allowance. The reason I say that, if I reason it out correctly, is this.

Assuming the Commission does go to an interim decision procedure—assuming arguendo that they do—and the phantom tax allowance question is down the road with other questions related to cost of service—if it turns out that the amount of tax benefits is greater than the return allowed to Tennessee's production properties, presumably the Commission would allow the difference between the return allowed on the production properties and the phantom taxes, consistent with what they have said in the El Paso and United Fuel cases. If it is less, they would take it away from us. So either way, they are protected.

(745)

Presiding Examiner: My recollection is refreshed now. I know that I raised that problem at one stage. On the last day of the February session, in Volume IV, the beginning of that Transcript I stated my view that—I suggested the possibility that if the Commission are to decide to issue an interim decision on rate of return at the end of this

746

session, that the Commission conceivably might not bother with the phantom tax problem at that stage, and that the only problem would then be that if the Commission should decide to reduce the rate of return from the 7 per cent requested by Tennessee on the interim basis, and make refunds based upon that hypothetical situation, the only changes which might later occur, if the Commission ultimately made a decision on phantom taxes, would be conceivably there might be even a further reduction and further refund. But I don't think we have to, under that analysis, decide that problem at this stage of the proceeding. Do you follow me, Mr. Bomar?

* * * * * * * * * *

758

Q. Mr. Symonds, I believe you testified awhile ago that your stock issue of 1,600,000 shares in February was oversubscribed. I believe the word you used was modestly oversubscribed. A. Yes, I said that.

Q. Now, the last stock issue that you had, I believe, was on February 4, 1958, when you sold a million shares, isn't that correct? A. I will accept it subject to check, yes.

Q. Did you have any difficulty in selling that stock issue? A. Not that I remember.

* * * * * * * * * *

763

By Mr. Stewart:

Q. Mr. Symonds, would it be a fair statement to say that your point of departure on your rate of return evidence was the assumption that the return on equity granted by the Federal Power Commission in your original rate case, in '46, somewhere along there, was a proper one? A. I think it was proper. I think, if anything I objected to, I thought it was too low in '46. But it was the one granted, and the one we lived under.

Q. And then you make the further assumption from that, that essentially the same return on equity should be granted now? A. Has been granted consistently since, and given the same relative equity in the company, which, as you know, has increased—but given the same relative equity in the company, I would say that the same return on equity should be maintained. Sinc our equity has been increased from the figure it was in '46 to 30 percent now, I would say that when we ask for 12.78 percent on equity today we are recognizing an improvement in our financial position, and

764

a slightly lower return on equity.

Q. Well, of course, when you use that figure of 12.78, percent, you are using a projected debt equity ratio. A. As of September 30, this year, yes.

Q. Now, on page 134, your reference to the pure cost of money, and the regard for risk in connection with return on equity—first, I would like to ask you if there is any substantial weight of economic authority which supports your position that you can so divide the return on equity? A. Yes. I would say that I could quote from "The Financial Policy of Corporations", by Arthur Stone Dewing, the Fifth Edition, 1953, Volume 1, page 639, and

I quote. "This balance"—that is gross profit—"however, is of great importance from the point of view of business policy, because it indicates the net return on the total capital invested. Granted the officers have received reasonabl salaries for their services, this balance represents from the point of view of economic theory the composite of pure interest, and the compensation for risk yielded by the corporation on the whole business." And then Dr. Barnes, that is Dr. Erstine R. Barnes, in 1942, when he was a Professor of Economics at Yale, was quoted extensively on the subject, and I can quote from him, too, if you would like it in the record.

765

Q. Well, here is the point, Mr. Symonds. I think it would be readily apparent that you can logically make such an analysis, and talk about it. But the real problem is whether or not these are items that can be computed separately. A. No, they are composites.

Q. Yes, sir. So that in your testimony in this case, you have attempted to compute what you call the pure cost of money separate and apart from the item of risk, and then assume that the same allowance should be made for risk which was made in a previous case, isn't that right? A. No, I have not computed them separately, because in the allowances made in previous cases for equity, there was an allowance in that figure for pure cost of money, and an allowance for risk.

Q. And was that so stated in any of those opinions or decisions? A. I am sure it was inherent in all of them. I have read those decisions. I don't have them all with me. They speak for themselves.

Presiding Examiner: You mean, Mr. Symonds, that in the other decision of this Commission, this pipeline rate proceeding, where it has occasion to pass upon the issue of rate of return, that in its discussion of rate of return,

and the cost of capital, it sets forth certain conclusions as to the cost of debt capital, and it also arrives at certain

766

conclusions as to what should be allowed for the common equity.

The Witness: Yes, sir.

Presiding Examiner: That is what you mean?

The Witness: Yes, sir. And in the allowances for common equity, I am sure that weight was given, must have been given, to the pure cost of money, as well as the cost of risk, in that determination.

Presiding Examiner: I think we would have to read those decisions, and they would speak for themselves.

By Mr. Stewart:

Q. To get back a moment, if I understood you, you said just now that you did not assume that you could calculate the pure cost of money, and then add the same allowance for risk that had previously been allowed in the case. Well, now, isn't that precisely what you do when you raise the total allowance for equity money by the amount that Triple A bonds have increased between two points? A. No, that is a measure of the increase in that imbedded cost of equity money. It is not the full allowance for it. It is a measure of the increase, which we are able to see.

Q. I understand that. But don't you assume, then, that you can measure it by the cost of Triple A bonds? A. No, I wouldn't assume that. I would say it is a measure of the increase. That is all I am saying.

767

Q. Well, can you measure the increase by any yardstick that is not an accurate measure itself of the thing you are measuring? A. In this case, I think I know what

the increase is. I don't known what weight was given to the imbeded cost.

Q. In other words, you can measure the increase in the cost of something by the increase in a certain measurement, without knowing whether that measurement will fit the thing you measure? A. I wouldn't agree with that, no. I would say—I stand on my previous answer. I wouldn't agree with your last statement.

Presiding Examiner: Let me see if I can help in this way, Mr. Symonds. You suggested a moment ago that based on your reading of the Commission decisions, in other pipeline rate proceedings, including Tennessee rate proceedings, that in your view you are assuming that in the Commission's determination as to what should be allowed in those cases, where the cost—for the cost of equity, you assume that the Commission took into consideration the cost of money as well as the factor of reward for risk.

The Witness: I feel sure they did.

Presiding Examiner: But you do not know, assuming the Commission did give consideration to both of those factors, what the Commission looked at or gave weight to as

768

the cost of money in those cases in connection with that particular part of its consideration of the problem of rate of return.

The Witness: That is correct.

Presiding Examiner: All right.

By Mr. Stewart:

Q. Well, now, when you are talking about the cost of bond money, you are also talking about a doublebarreled cost, are you not, composed of what you might call the pure cost of money, or the reward for the postponement of the enjoyment of your money, or whatever you want to

call it, and a risk factor there, are you not? A. Yes, you are. But as you approach Triple A bonds and Treasury notes, you are reducing the risk element to a minimum figure—the most minimum figure we are able to reflect in any statistic today.

Q. But, nevertheless, it is there? A. There is risk in all kinds of investment of some kind.

Q. Yes. And one of those risks, in connection with bonds, is the risk that when you get your money back out of the bond, it will not be nearly so—worth nearly so much in purchasing power as it was when you put it in there, is it not? A. That is a possible risk in bonds, yes.

Q. And it is generally considered that that is an important

769

factor in the increased cost of debt money, is it not, that we have been experiencing in the last few years, isn't that right? A. I think it is one reason why investors have not been willing to buy bonds. I think the great demand for capital which in the business expansion that it has carried on is called inflation—I think that would be corollary you are talking about, yes.

Q. As a matter of fact, then, what has been happening is that investors have become more reluctant to put their money in a security where they simply are guaranteed a certain number of dollars, and have instead tended to shift to common stock? A. Some have, yes.

. . . . . .

774

Q. Now, I really hate to ask you about this, you have been asked so much about it, but on this page 22 and 23 of Exhibit 13, on page 22, Mr. Symonds, do you know what the rates of return allowed in those cases were? A. No.

Q. Well, whoever computed this must have known, I

assume. A. I am sure I have seen them. I had it prepared under my direction. But we were concerned only with the returns on equity, common equity.

Q. Don't you think that the actual return allowed has some significance in trying to assess the value of this material on this page? A. No, I don't.

. . . . . .

783

L. E. Katzenbach

. . . . . .

Cross-Examination

By Mr. Spalter:

. . . . . .

792

Q. Now, your concern is not only with Tennessee; it is also with other transmission pipeline companies, is it not? A. Well, we follow the pipeline industry generally, and we've done investment banking for a number of pipelines. And we have, perhaps I can say without too much lack of modesty, been extremely instrumental in helping the whole industry raise capital for the expansion. That means that we have recommended the securities to many of our customers.

Q. Now—excuse me. A. That means, therefore, that we have a real interest and responsibility. The last thing we want to do is to have the industry get in a position where we have to tell our customers that they should seek other forms of investment.

. . . . . .

813

Q. Mr. Katzenbach, turning again to transcript 156, at the bottom of that page you indicate at line 17:

"In order to attract common stock equity capital the company must be able to compete effectively with other industries which are attracting equity funds."

Let me ask you first, is it your position in the proceeding here that in order to be able to compete as you have indicated in that testimony, the Tennessee Gas Company needs at least a 12.78 percent return on equity? A. Mr. Spalter, the answer to that, as I think I have brought out in my direct testimony, depends upon the size of the common stock equity ratio.

I have brought out here the axiom that the rate of return necessary to attract investors—I am speaking of common stock equity—the rate of return on common stock equity will vary according to whether that equity is a large percentage of the total capitalization, or a relatively small percentage of the total capitalization.

I believe that a rate of return on common stock equity for Tennessee of roughly 12.8 percent, which would be the result with the equity calculated on a basis of approximately thirty percent, is the minimum required by Tennessee to compete effectively for common stock equity capital.

814

Q. Let me ask you, Mr. Katzenbach, isn't it a fact that there are certain groups of investors who invest in certain industries only, and don't invest their money generally throughout the market? In other words, aren't there a group of investors who would stay with the pipeline industry as such in investing their money? A. I don't know of any who have just set a policy to themselves, "I will invest in nothing but pipeline securities". The closest I could come to a case such as you mention is the case of a mutual fund which might set up several funds, one of which is to be specifically concentrated in one particular

class of securities. Sometimes they call them income stocks or growth stocks or something of the sort.

But aside from a situation of that sort, I don't know of any significant investor or group of investors who just say to themselves, "I am going to invest in this particular industry and none other".

Q. Well, in order to compete for the equity money that may be available in the market, Tennessee of course has to compete with the other pipeline companies, too, doesn't it? A. It has to compete with other pipelines, it has to compete with electric utilities, it has to compete in every section of the market.

Q. And with respect to pipeline companies, can you tell us at the present time how many are earning 12.8

815

percent or more on their common stock?

Mr. Werner: Mr. Spalter, when you say at the present time, do you mean—

Mr. Spalter: No, not right on this day.

Mr. Werner: Do you mean 1960, or 1959, or 1958?

Mr. Spalter: If he knows, as of January of this year, or the latter part of last year.

Mr. Werner: Most pipelines, Mr. Spalter, have got cases pending before this Commission in which they are seeking rates of return at various levels. Those rates of return which have been applied for by other companies on an overall basis will, I think, generally, produce a rate of return on common stock equity which would be of the same order of magnitude as that applied for by Tennessee, giving due account to the differences in the common stock equity ratio.

Q. Let's get away from the question of what has been filed for and let's turn to the fi fact, so to speak, as to what the companies are earning or have earned on their

equity prior to filings that may be pending at this time.

How many companies are in that situation, that they earn a return on equity of either 12.8 percent or more? A. Well, if you don't take into account the revenues collected under bond cases that have been applied for, they are all in sad shape.

Q. Tennessee has been earning more than 12.8 percent

816

on its equity, hasn't it? A. Not on a thirty percent equity, Mr. Spalter.

• • • • • • • • • • •

828

By Mr. Spalter:

Q. Mr. Katzenbach, at transcript 160 through 163, you discussed the question of the coverage figures that you use on page 3 of your exhibit. And you refer at the bottom of page 161 to the fact that the coverage figures shown on page 3 are derived on the basis of earnings after income taxes. And you go right on to say:

"It is perhaps more customary to measure coverage of interest requirements against earnings before applicable income taxes, but I would say that both bases are acceptable and frequently used."

I would ask you, isn't it a fact that the less customary method which you have used to measure your coverage has the effect of reducing the coverage figures and showing them in the most unfavorable light possible? A. I have looked at them both ways, Mr. Spalter, and I go through the calculations here to show them both ways. I could easily have shown these figures on the basis of computing

it as I do beginning on the bottom of page 62. The figures would be larger.

It doesn't matter to me what the figure is, so long as you state the basis on which it is prepared, the important thing is the trend that it shows.

An investor expects one kind of an answer on the basis of coverage computed after income taxes and a different

magnitude of answer if computed before income taxes.

I have simply tried to demonstrate, beginning on the bottom of 162 and 163, that if you compute them before taxes, it is true you would get higher figures, but the relative trends and the pictures shown would be the same.

Q. Well, have you computed them before applicable income taxes? A. Yes, I don't show them here.

Q. I realize you don't, and I would like to ask you to set out for the record what the appropriate figures would be prior to deduction of the income taxes as you have shown them on page 3. Could you complete that picture? A. I have done it, Mr. Spalter, for two representative examples. I have done it for June 30, 1953 and I have done it for July 31, 1959.

In the case of June 30, 1953, the result is 4.12 percent, as shown on line 8 of 163.

Now, if you would like to have me do the computations for each of the others and present them to you, I would be happy to do so over the noon recess.

Q. I understand that you had already done it and all you would have to do is read the figures in the record. A. No, I didn't bring the figures with me, but I could get out my pencil, and I would be glad to do them.

Q. If it wouldn't take too long a time, we would

appreciate getting it from you after the noon recess. A. Surely.

Q. Let me ask you, with respect to that matter, have you ever heretofore used the earnings after taxes to compute coverage in any case before the Commission? A. I haven't testified in any other pipeline rate case before this Commission that I can recall.

Q. How do you present the matter of coverages to your clients when you advise them?

Do you present them with the coverages after taxes or before? A. As I said before, the more customary method is to do it on a basis before taxes, Mr. Spalter.

Q. How do you do it for your clients, is what I am interested in? A. Mr. Spalter, we don't have a rigid set of rules which say you go to a manual and you compute it this way and that way. I think most of the time, as I have said in my testimony, we present it on a basis before taxes. Frequently it is shown on a line below after taxes. Frequently they are shown both ways.

Q. And would the same testimony you have given with respect to computing coverages on debt apply to your statement with respect to coverage on preferred stock dividends? A. The usual basis of computing preferred dividend

coverage is after interest—I mean after income taxes, not before. That is the usual custom.

Q. Now, at transcript 166, at lines 14 and 15, you state that the investor will first consider the risks of the business enterprise as a whole in comparison with other companies, and I would ask you, could you explain for the record in

(831)

detail how the investor goes about considering these risks and how much success he has in arriving at a definite conclusion which represent a correct appraisal of the relative risks involved?

Mr. Werner: May I have that question read back?

(The pending question, as recorded, was read by the reporter.)

Mr. Werner: I have no trouble understanding the first part of the question. I confess I do have trouble understanding the last part of the question.

However, to save time, if the witness understands the question, I have no objection. I don't understand the last part of the question.

Mr. Spalter: It relates to the next sentence of the witness' testimony, as to the conclusion that the investor reaches. And we would like to know how he reaches it.

Mr. Werner: I don't care to argue about it, Mr. Splater, if the witness understands he can go ahead and answer it.

The Witness: I will try and answer it.

832

The investor I take to assume the composite of the investing public as a whole.

By Mr. Spalter:

Q. I mean the same investors that you have referred to on line 14. A. Yes.

Well, Mr. Spalter, let's start off by—you asked me to take detail; I am afraid the answer will be lengthy, and I will try to be aware of the Examiner's request to try and move a little faster.

Let's start with the public utility type industry, where one has a franchise market and in effect a monopoly, a

characterization which would apply particularly, let's say, to a water system or to an electric power and light company. He would say to himself, "Certainly the risks of competition in this particular area of the investment field are about as low as I could find anywhere. This service is essential. I don't have too much worry", the investor says to himself, "about competition, or about the essential nature of the service. My principal worry as to the business enterprise as a whole is an economic one". The ups and downs in the general status of economic conditions might and do have a bearing on the consumption of water, perhaps not too great in that case, and on the consumption of electricity.

He would look at the percentage of industrial load, for

example, of an electric utility company, and he would say, "That is more subject to ups and downs than the residential load".

Am I going into too much detail? I will shorten it if you are getting more than you wanted. I am as anxious as anyone to keep it moving.

Q. No, I think the record ought to be clear what you have in mind when you talk about the investor will consider the risks of the business. A. All right. That would be, let's say, for the end of the spectrum from the standpoint of considering the risks of the enterprise as a whole.

Now, we might try to find something at the further extreme of the degree of risk. We might take an enterprise which is wildcatting for the discovery of oil or natural gas, where the risks are considerable, I think it is generally recognized. We might take a company which has got an invention for which it has great hopes but hasn't yet got in business, and there is no assurance that there

will be any degree of success or that other products wouldn't come on the market to replace it.

You have all different graduations of degree of risk in the spectrum.

The second part of your question asked me how successful the investor is in appraising the degree of risk attendant

834

upon any business enterprise as a whole. I would say that the investor has a pretty fair measure of success in the sense of reaching a judgment which proves over a period of years and in the long run to be reasonably accurate.

Q. At the bottom of the page 166 you state:

"The lower the common stock equity as a percentage of total capitalization, the greater is the degree of this additional element of risk",

and keeping that in mind—I have quoted you correctly, haven't I? A. Yes, sir.

Q. On page 167, at lines 21 to 23, you say:

"The natural gas pipeline industry in my opinion is regarded as having somewhat greater risks than the electric industry",

and from there you go on to your statement on transcript 171, lines 2 and 3, where you conclude from pages 4 and 5 of your exhibit by saying:

"These pages demonstrate that the electric utility industry is more conservatively capitalized than Tennessee."

Do you have all those points in mind that I have referred to? A. Yes.

Q. Isn't it generally true that the electric utility

industry is more conservatively capitalized than most natural gas pipelines? A. I can't say that it is more conservatively capitalized than most; there are many natural gas pipelines with relatively common stock equities.

Q. Well, in comparison of industries, which would you say is more conservatively capitalized, the electric utility industry or the pipeline industry?

Mr. Werner: You mean taking the average of both industries, Mr. Spalter?

The Witness: Is there another question pending?

Presiding Examiner: Read the last question.

(The pending question, as recorded, was read by the reporter.)

The Witness: Excuse me. I thought that Mr. Spalter was going to continue.

I think studies would show that the electric industry is more conservatively capitalized than the pipeline industry.

By Mr. Spalter:

Q. Then could you tell us how you reconciled the so-called thinner common equity for the pipeline as compared with the electric utilities with your statement which I read to you at the bottom of page 167 that;

"The natural gas pipeline industry in my opinion is regarded as having somewhat greater risks than the

electric industry"?

Mr. Werner: I don't understand the question.

Mr. Spalter: I think the witness understands the question.

The Witness: No, I don't, Mr. Spalter. I don't see that there is any contradiction to reconcile. We are talking about two different things.

By Mr. Spalter:

Q. Is it usual for a risky business to issue more debt than a business that is not as risky?

Do those things follow? It follows in the natural gas pipeline industry in a great many cases, yes. They have, in the opinion of investors, not only a riskier enterprise as a whole, but the industry has followed a practice of financing its business on a basis which in the composite has resulted in a higher debt ratio and a lower equity ratio.

There are a number of exceptions, but in the composite, that is true. So the result is that if the common stock equity ratios between electric and gas were the same, the gas pipeline equities would be considered more risky by investors, and the fact that they are lower makes them even more so.

Q. Are you saying that despite that situation it is not unusual in the financial world to have a more risky business issue allotted debt as against one that is not as risky?

A. I don't think that it is usual, but it exists in this case.

Q. Well, let me ask you, is the reverse actually the situation in the financial world, that the risky business, so-called riskyer business, would issue equity rather than debt? A. Usually that is the case. It doesn't happen to be in this example we are talking about.

. . . . . .

Q. Now, turning to transcript 177, you state at line 10:

"Investors look directly to the rate of return on common equity in measuring the attractiveness or lack of same of one common stock as against the multitude of investment choices available in the market."

Did I read that correctly, other than leaving out the first word? A. I didn't follow each word. I assume you did.

Presiding Examiner: Mr. Spalter, I think we can say that you read very well.

Mr. Spalter: I don't want to be accused of reading out of context.

By Mr. Spalter:

Q. Would you say from the conclusion that you voice there that the investor's job insofar as putting his money into common equity is a very simple one? A. No.

Q. Well, let's take a look at page 4 of your exhibit, column 5. That is the return you had in mind at the lines that I read to you, isn't it? A. I beg your pardon? Could I have the question again?

(854)

Q. I am referring you to column 5 of page 4 of Exhibit 14, and asking you whether or not that is the return you had in mind at lines 10 to 13 of transcript 177, when you spoke

855

of the rate of return on common stock equity? A. That is the measurement in column 5 of the rate of return on common stock equity for the companies listed there in the electric utility industry on page 177, lines 10 through 13, which you quoted. I was speaking more generally. But this is the rate measurement that I had in mind.

Q. Well, confining it, then, to the electric industry data that we have before us in your exhibit, and taking your statement as it appears at transcript 177, would you say that the Houston Lighting and Power stock is more attractive than the Florida Power and Light stock? A. I would say that the Houston Lighting and Power stock, which shows a rate of return of 14.6 percent on equity in 1958, is higher than the 14.3 percent ratio for 1948 for Florida Power and Light. But it doesn't necessarily follow that that means that the one is more attractive for purchase today than the other. We have got to look at the future.

Q. Your statement says that:

> "The investors look directly to the rate of return on common equity in measuring the attractiveness or lack of same of one common stock as against the multitude of investment choices available in the market."

A. Perhaps my meaning would have been more clear, Mr. Spalter, if I had said, "Investors look directly at the rate of return to be expected on common stock equity in the future

856

in measuring", et cetera, I thought it was implicit.

Q. Now, how does the investor determine the rate of return to be expected on the common stock in order to determine which stock is more attractive? A. He sizes up the job which management has been doing. He tries to get an insight into management policy. He studies and learns what he can about the nature of the regulation to which the company is subject. He looks at the territory, its growth pattern over recent years, and he tries to arrive at an opinion of what he may expect in the future. He has to balance a great many factors in his judgment, but what he seeks to do and what he does do is to arrive at a judgment that the company he has under consideration can earn, has an opportunity to earn, and he hopes will earn a given level rate of return on common stock equity.

Now, some of these companies in the list here show quite low returns on common stock equity. They are not satisfactory for investment, if you feel they couldn't be improved upon.

Q. Mr. Katzenbach, let me ask you, all these items that you say that the investor looks at and wants to learn about, how much time do you think it takes him to study a stock or the multitude of stocks that are on the market to determine all those factors? A. It takes him a great deal of time.

857

Q. And how many times does the price of stock he is studying change within the period of study? A. Well, he is studying it all the time. After all, the market for these stocks are largely influenced by the decisions and recommendations of investment portfolio managers whose job is a professional one, they devote their entire time to it, their brokers and investment banking people devote

their entire time to it, on the basis of which they make recommendations to their clients, and it filters all out.

I am not suggesting that the man who holds down a job in a company who happens to be an investor devotes all this time, but it comes through to him, he has either got his funds in the hands of an investment counselor, or he relies on the advice of an investment dealer who is doing this kind of work all the time.

Q. In other words, the investor actually does none of the studying, he does the listening to men who have done the studying? A. In the strict sense of the word, you might say this is largely true. The investor, for example, in the mutual fund, he doesn't do the studying, that is the reason he puts it in the mutual fund.

If you have an interest in a pension plan and you are a worker in the plant, you don't go through all that, but

the trust officer of the company who manages that fund does it, so if you think the investor, which is largely the case, as being individuals all over the country, he individually who might have the ultimate ownership isn't doing it, but the prices are influenced by the people who are giving it constant study.

Q. And that is the business you are in, isn't it, giving advice to the investor? A. That is part of our business—it is a good part of it.

* * * * * * * * * *

Cross-Examination

By Mr. Freeman:

Q. Mr. Katzenbach, at transcript page 160, you testified that a shift in the proportion of long-term debt upward or downward would have an effect on the interest coverage figures. Just so that the record will be entirely clear, what

effect would an increase in the percent of common equity have on the coverage ratio?

859

A. I am sorry, Mr. Freeman, I didn't get the point of your question.

Q. Well, your testimony is that a change in the capitalization ratio would have an effect on the coverage ratio, and just so that the record will be entirely clear, I want testimony as to which direction this change is; in other words, if the common equity increases, will the coverage ratio also increase? A. Yes, that would be the case, all other things being equal, of course.

Q. I refer you to page 2 of your exhibit. And I note that you did not include the interest coverage ratio for the balance sheet dated September 30, 1959, which is shown on page 21 of Mr. Symonds' exhibit 13.

Have you calculated the coverage ratio based on the capital ratios shown on that page of Mr. Symonds' exhibit? A. No, I didn't happen to do that. I prepared mine independently of Mr. Symonds'.

Q. It is a rather simple calculation—

Mr. Werner: Excuse me, Mr. Freeman, did you refer to page 21 of Exhibit 13?

Mr. Freeman: I did.

Mr. Werner: I think you used the date of September 30, 1959?

Mr. Freeman: Excuse me. I mean 1960.

860

Thank you, Mr. Werner.

By Mr. Freeman:

Q. Referring to that page, it would be a rather simple matter to compute that coverage ratio. Would it not be

the 2.46 percent shown in column 5, it would be that number into 7, would it not A. Yes.

Q. Which would be 2.85; is that correct? A. Well, I will accept your figure. I haven't done the arithmetic.

Mr. Littman: Is that the coverage using a seven percent rate of return?

Mr. Freeman: That is correct.

By Mr. Freeman:

Q. This would give you a coverage ratio that would be higher than any subsequent to 1953 shown on page 2 of your Exhibit 14, would it not? A. Yes, it would—

Q. And this would then reverse the declining trend that you testified to? A. No, sir; that is not the whole story at all.

Q. That wasn't my question, Mr. Katzenbach.

I asked you whether or not this, as far as the coverage ratio was concerned, whether or not this would reverse the declining trend to which you testified?

861

A. Your arithmetic is correct.

Q. Still referring to page 21 of Exhibit 31, if you will assume for me that by December 31, 1960 the common equity of Tennessee is further thickened to thirty-five percent, and that the capital ratio for long-term debt is reduced to fifty percent, using the same interest costs as shown on page 21, you would have a return element, an item under "Return", in column 5, of 2.18 percent, would you not, at least it would half of 4.35? A. That is right.

Q. And if you then computed the coverage ratio of a seven percent return, you would end up with 3.21, would you not? A. I find nothing wrong with that arithmetic.

Mr. Werner: May I go back over your arithmetic?

Mr. Freeman: Sure.

The Witness: Pardon me. May I ask what figure you got again by dividing 2.18 into 7?

Mr. Freeman: 3.21.

The Witness: That looks close.

By Mr. Freeman:

Q. This would be a higher coverage ratio than any of the figures shown on page 2 of your Exhibit 14 other than the very first one, would it not? A. Again I find no quarrel with your arithmetic.

862

Q. And if you would just make one more calculation for me, using a six percent over-all return rather than seven, the last computation, you would get a coverage ratio of 2.75, would you not? A. I think you have an excellent slide rule.

Q. Turning now to transcript page 165 of your direct testimony— A. May I just check one thing again to make sure that I understand.

Your result obtained by dividing 2.18 into six was how much again?

Q. 2.75. A. Yes.

Q. Turning now to transcript page 165 of your direct testimony, you testified that an analysis on the coverage of interest in preferred dividend requirements similar to that you have outlined for debt securities would show substantially the same results. Have you made such a study, Mr. Katzenbach? A. I have tested the figures on an over-all coverage basis to show that the effect of a declining trend of coverage would result from the maintenance of a given over-all rate of return starting at six, and of course assuming a more or less constant capitalization ratio.

Now, of course, if you are going to vary the capitalization ratios, your cost of interest and preferred dividends

could go up considerably, and you could simply theoretically offset that by just increasing the equity and reducing the amount—

Q. Excuse me, sir—

Mr. Werner: Let the witness finish his answer.

Have you finished?

The Witness: No.

By Mr. Freeman:

Q. Excuse me. A. —so therefore the only meaningful test is one, of course, which assumes a more or less constant set of capitalization ratios over the period. And on that test, just as I have done it on the interest basis, it shows a declining trend.

Q. I am not sure that you understood my question. A. I am sorry.

Q. Did you make the computations on the coverage, interest and preferred dividend requirement, similar to the computations which you put in evidence in your Exhibit 14? A. Yes, I did.

Q. As I understand your answer, although the numbers would be different, they would be in proportion to the numbers that you put in evidence in this proceeding? A. It shows a deteriorating trend of coverage ratios, the same as my figures have shown on interest coverage

ratios.

Q. And if you made computations similar to the ones that I have just asked you to make, that the numbers would be in proportion to the numbers you have given me aside from whatever conclusions you wish to draw from them; is that correct? A. Let me make sure I understand your question.

In other words, if I were to make similar calculations for preferred stock, assuming that the common equity ratio goes up to thirty-five percent, and the debt ratio goes down to fifty and corresponding reductions made in the proportion of total capitalization represented by preferred stock, if I went through those calculations, it is obvious, I think, that you would get higher coverage ratios than you would if you didn't make those hypothetical assumptions, because if you reduce the proportion of your total capitalization which is represented by debt and preferred, why therefore you reduce the total requirement.

In other words, you upgraded the equity ratio, but you haven't gotten the corresponding increase in coverage ratio.

. . . . . .

865

Q. Mr. Katzenbach, at transcript page 171 you testified that the electric utility industry has on the whole been able to earn close to eleven percent on its common equity base, and that there are some companies which earn thirteen percent. Of course, if the average is eleven and some earn thirteen, some also earn eight, do they not?
A. That is true.

Q. And so on transcript page 175 when you testify on line 7:

> "In the preceding year, namely, about eleven to thirteen percent on the average",

actually you meant about eleven percent on the average, or from eight to thirteen percent?

Mr. Werner: Are you referring to his page 4 of Exhibit 14?

I am sorry, I didn't quite follow you.

Mr. Freeman: That is correct. I think it is clear.

The Witness: What I had in mind there, Mr. Freeman, was this: We have three groups, and we have averages. The lowest average of the three is 10.9, which I rounded off to eleven. The highest of the three averages is 13.1, which I rounded off to thirteen. There are a few companies higher in the second group which earn—one shows a low as 8.6—

866

By Mr. Freeman:

Q. Excuse me, Mr. Katzenbach, I think I can shorten this.

The group goes on page 4, you testified that they were not representative, these were the best companies that were listed on a certain memorandum circulated in your company's office in December— A. I didn't say they weren't representative; they are representative of a wide group. They are the group from which we have chosen particular ones we would recommend.

I recognize that there are some in there that earn returns as low as 8.1 percent, and I would hasten to add that the only reason they are recommended is because each and every one of those cases contains a very definite prospect of getting that 8.1 percent up to a very proper figure. It is due to a regulatory lag, among other things.

Q. But the electric utilities shown on page 4 of your exhibit 14 are the companies that your investment company considered the best prospect in December of 1959 in their respective groups as you have shown? A. That is right.

Q. And in the listing on page 5 where you have computed the average of all the electric utilities, you come up with an eleven percent over-all average; is that not correct? A. Yes.

Q. So that on transcript page 175 when you testify that

867

the earnings on common stock equity of about eleven to thirteen percent, if you refer to the average of the electric utility industry generally, what you really meant was eleven percent, did you not? A. The average for the whole industry is eleven percent, correct.

Q. On transcript page 172, Mr. Katzenbach, you testified that you knew of investment managers that have shifted from gas transmission stocks to electric utilities. Your company has been one of the principal underwriters in marketing securities of Tennessee Gas Transmission Company, have they not? A. Yes.

Q. You have participated in the recent sale of stock that was marketed on February 16, 1960? A. Yes.

Q. And you had no difficulty at all in marketing that stock, did you? A. No. It turned out to be a successful operation.

Q. Have you ever had any difficulty in marketing Tennessee's stock? A. Tennessee has been successful—we have been successful, I might say, in all of the offerings of Tennessee common that I can recall—

Q. Mr. Katzenbach—

868

Mr. Werner: Have you finished your answer?

The Witness: Not yet.

Of course, that is not unusual. Our business can't afford too many so-called turkeys, because when they do, they are disastrous, and it takes a lot of reasonably successful ones to make up for the occasional losses that we run into. But you are right, Tennessee has had a good and successful record of marketing its stock.

By Mr. Freeman:

Q. Do you know of any investors who have shifted from Tennessee Gas Transmission Company stock to electric

utility stock within the last year? A. Yes, I think I have several.

Q. Isn't it also true that there have been investors who have shifted to Tennessee Gas Transmission Company stock in order to have the advantages of the future growth anticipated in that stock, or for other reasons?

Mr. Werner: Shift from where to where?

Mr. Freeman: From gas stocks to Tennessee Gas Transmission Company.

Mr. Werner: Do you mean from one natural gas stock to Tennessee Gas Transmission Company stock?

Mr. Freeman: Excuse me, I misspoke. I mean investors who have shifted from electric utilities stock to Tennessee Gas Transmission Company stock.

869

The Witness: I don't know of any significant trend in that direction.

By Mr. Freeman:

Q. But there has been some shifting of that nature, has there not? A. I suppose it goes on every day.

I am talking about significant changes of prominent institutions. And I don't know of any that have shifted from electric utilities to pipeline securities, whereas I do know of instances where significant important institutional investors have reduced their commitments in pipeline industry for the reasons stated here.

Q. Do you know of any such significant reductions in the holdings of Tennessee Gas Transmission Company stock? A. I can think of at least one significant case. And I am sure that if I were to do some investigation, I might find others. I can think of one.

Q. But there hasn't been any major shift of that nature, has there? A. It has been enough to be alarming to some-

one who is interested in financing the pipeline industry, as we are.

Q. But the investing public didn't seem to exhibit any reluctance to buy the latest issue of Tennessee's stock, did they? A. No, fortunately I can say that the investing public

870

has maintained its faith in the future of the industry, and its faith that the Federal Power Commission is going to give the kind of recognition that today investors feel is necessary to justify their confidence. And that is a good thing. And that is why Tennessee was successful in its recent offering.

Q. Excuse me, but I believe you have repeated what is already on the record.

Mr. Werner: You have asked questions which I think have been answered. Mr. Freeman.

Presiding Examiner: Mr. Katzenbach, is the investing public which has purchased the latest offering of Tennessee stock any different from the segment of investors that you referred to as having shifted from Tennessee stock to electric utilities?

The Witness: I wouldn't identify them precisely.

The purchasers of the last issue of Tennessee's stock would be of course a broad cross section of investors from institutions to individuals and trust departments for the accounts of individuals.

Presiding Examiner: I understand.

Now, you testified earlier this afternoon, in response to some questions by Mr. Spalter, that actually it is not the individual personal investor who makes a really comprehensive and thorough study and analysis of the matters you

871

have discussed in your testimony, but rather, it is the investment brokers and the investment houses such as

your own which make those studies all the time, and those studies are made for the benefit and are channeled through to the individual investors. Now, going back again to the first question I asked you a few seconds ago, I assume that same characterization of the situation would apply to the investing public which purchased the latest offering of Tennessee stock.

The Witness: Yes, that is true. I am not trying to contend, Mr. Examiner, that the natural gas industry has lost all its friends.

Presiding Examiner: I understand that.

The Witness: There have been a couple of instances which I take as alarming signs, but fortunately they are limited.

Presiding Examiner: Do you have any explanation in your own mind, bearing in mind the fact that the investing public responded so favorably to the latest offering of Tennessee's equity stock—was it in February of this year?—

Mr. Werner: Yes.

Presiding Examiner: —do you have any explanation in your own mind as to why some segment of that investing public unloaded Tennessee's stock to electric utilities stock in the recent past?

The Witness: I am sorry, I don't understand your question,

872

Mr. Examiner. I didn't understand the part of it—I understood you to say that certain people at the time of that offering shifted out of Tennessee?

Presiding Examiner: No, you said in answer to Mr. Freeman's last question that you could think of at least one instance—I assume in the contemporary period, recently—in which holders of Tennessee stock had shifted

to invest their funds instead in electric utilities. And I am asking you whether you have any explanation in your own mind as to why those particular investors—and you stated that if you wanted to do some research you could perhaps find others—what explanation do you have in your own mind as to why those particular investors acted in that manner, which doesn't seem consistent with the pattern followed by the investors who purchased the latest Tennessee offering in February of this year.

The Witness: Oh, there is an explanation for that, because in every transaction on the board every day, there is a seller for every buyer. I am simply pointing out that, one, there still remains, fortunately, most of the potential investors who are potential purchasers of Tennessee, they still have confidence in the future and confidence in the kind of treatment they are going to get from the Commission.

But I say that there are amongst that group of potential investors, some whose opinions and whose standing in the

industry are significant enough to pay attention to, who have said, a few who have said "Despite what everybody else may have in the way of confidence, we are getting out".

Now, there are a few isolated instances. It is a straw in the wind.

I pointed out, not because I am trying to make a particular argument of it here, but because I think it is significant, and it is alarming to someone who has an interest in seeing that the natural gas industry continues to keep its friends as it were, we hate to see them lose them—

Presiding Examiner: Are you implying, Mr. Katzenbach, that the investors who subscribed to the Tennessee common stock offering in February of this year listened to one group of investment counselors, whereas the investors who

shifted their Tennessee holdings to electric utility holdings listened to another group of investment advisors?

The Witness: No, that is not it, Mr. Examiner.

Let's look at it this way: There are, I don't know, a hundred different investment trusts which own or are potential owners of Tennessee Gas Transmission and Pipeline securities generally. Now, if you see two important ones—they each have their own investment committees, they each have their own investment offices—if you see a handful suddenly become disenchanted with the industry—not

874

suddenly, but over a period of time—it is alarming.

The fact is, we have still got a degree of enthusiasm and confidence on the part of the remaining ninety-five.

Now let's take the trust departments of banks. They make their own decision, they are acting for individuals, they are acting for trust accounts which may be held by pension funds and all sorts of things. Each of those individual institutions exercises its own judgment. Now I would hope that all of those individual investment companies, trust departments of banks, would remain as enthusiastic today as they were several years ago about the Gas Transmission industry.

I am simply pointing out that there has been some deterioration, in that there have been a few that have dropped out of the flock.

Presiding Examiner: Thank you.

By Mr. Freeman:

Q. In your answer to my last question, I got the implication from some of your comment that the number of people interested in Tennessee's stock either remained static or was decreasing. Is that a correct implication?
A. No, I didn't intend to convey any such impression.

Q. As a matter of fact, the number of people owning Tennessee common stock has increased sharply, has it not? A. Oh, yes, that is true. It is bound to increase

875

on every offering.

. . . . . .

By Mr. Plaine:

. . . . . .

897

Have you been keeping your eye on the coverage ratios of other companies in the natural gas transmission field, comparable

898

companies? A. Yes.

Q. Would you say that their coverage ratios likewise have been showing a similar trend to that exhibited by Tennessee Gas Transmission? A. Well, most other pipelines are also seeking the rate increases, the amount of which varies, some of them have current cases pending, and others don't. But all pipelines, all representative ones anyway, have been subject to the same influences that Tennessee has felt, namely, the rising cost of money, the rising requirement, in other words, for paying interest which must be met out of the over-all rate of return.

So from company to company you find that, were there no increase either applied for or granted, you would find a deteriorating trend of coverage ratios.

Q. But you would agree that Tennessee is in no disadvantageous position as compared to these other comparable companies in this respect? A. The other companies generally have the same problem that Tennessee has.

. . . . . .

901

The Witness: Referring to page 3 of Exhibit 14, column 4 shows the interest coverage ratio based upon a six percent rate of return. I will read the following figures for this column 4 from line 1 down through 9. The figures I am about to give you are based upon a computation of interest coverage before income taxes, calculated in the manner set forth on page —

Mr. Spalter: It is 165, isn't it?

The Witness: —162, beginning at line 17, and continuing

902

through line 12 of page 163.

Here are the figures, reading down the column:

5.29, 5.42, 5.01, 4.73, 4.52, 4.52, 4.28—that corresponds to the figures in parenthesis of 2.57 for interest coverage after taxes.

The next figure for line 8 is 3.84, and finally, 3.604, line 9.

Now, I have corresponding figures on a pre-tax basis for columns 5, 6 and 7.

Presiding Examiner: After taxes?

The Witness: On a pre-tax basis.

Mr. Werner: The figures he is going to give are before income taxes.

Presiding Examiner: Off the record.

(Off-the-record discussion.)

Presiding Examiner: On the record.

The Witness: The new figure for column 5 under the heading 6.6 percent would be 4.82, as compared with 2.83 presently shown.

The figure for column 6 would be 4.50, as compared with 2.68 presently shown. And finally, the figure for column 7 would be 4.38 as compared with 2.62 as presently shown.

I might add one further point, and that is that these

were, these figures just given were constructed on the basis, as I previously mentioned, outlined on page 162 and 163,

903

with the exception of the fact that the figures in lines 1 and 2 are not based upon a fifty-two percent income tax rate but are based on a thirty-eight percent rate which I believe was the applicable rate in 1946, and upon a rate of 50.75, which I understand was the applicable rate for 1951 shown on line 2.

. . . . . .

914

Q. Well, isn't it true that in 1946, and for awhile thereafter, Tennessee's mortgage bonds were rated BAA? A. Yes, that is my recollection—that they were originally rated BAA.

Q. And isn't it true that somewhere around 1952 or 1953 that rating was changed to A? A. That is in accordance with my recollection, yes.

Q. Isn't it still A? A. Yes, it is still A.

Q. And isn't it true that by Moody's own estimate of their basis for the ratings, that risk is one of the important factors in setting up that rating? A. Yes.

. . . . . .

920

By Mr. Stewart:

. . . . . .

921

The Witness: I believe so, yes. I have addressed myself to the question, and reached the conclusion that Tennessee needs a 7 percent rate of return with respect to its regulated business—I am thinking of it as being the transmission end

922

of the business. I have not made a separate approach to the rate of return which might be required from that por-

tion of Tennessee's business, which is regulated, and which involves producing as distinguished from the transmission end. I have done a lot of work, however, on the producing—given a lot of study to the producing business in general, and had I done so, I have no question in my mind that I would come up, with respect to the production end of the business, with something higher than a 7 percent rate of return, as a practical matter. But I have not and was not, in fact, asked by the company to consider it separately, the producing end of the business. In fact, my understanding is that this question of separating the two came into the picture afterwards.

938

Isn't your fundamental approach to this question of return on equity based on the assumption that the original decisions of the Federal Power Commission on rate of return for Tennessee were right and proper?

Presiding Examiner: Read that question, please.

(The question, as recorded, was read by the reporter.)

The Witness: That is part of it.

By Mr. Stewart:

Q. And then on the further assumption that insofar as you derive a return on equity capital from those early allowances of over-all rate of return, that same allowance should be made now, with the difference, I might say there—the differences that you find in connection with

939

differences in capitalization ratio. A. No, I have devoted a great deal of attention to the competition, because I think that is the important thing, Mr. Stewart. What is the competition for investors' dollars? I have introduced

exhibits on the electric industry, two of them, which, as I have emphasized before, I think is the real significant area of competition. It is not just that I think it. I see it. I hear it talked about with investment officers, all the time. It is a tangible thing. We see it. We have to deal with it. It is not just a question of going back and saying this is what they did, they have got to maintain it. That is part of it, yes. But what is the competition today?

Q. But, again, inevitably when you are talking about competition you are talking about competition to sell at a price, are you not? A. No.

Q. Mr. Katzenbach, isn't it obvious that if you cannot sell your stock at 35, you very probably can sell it at 30? A. Mr. Stewart, I have based my premise—I am sorry I have not been able to make my testimony and my cross-examination more clear. But I have tried to make the point that investors look upon the rate of return earned on common stock equity as the primary factor which results in a satisfactory record of performance for the common stock which they hold or purchase. That rate of return determines, together with the money

that was plowed back into the business, the rate of growth which investors may expect on the earnings per share of the company.

Now, this is what electric utilities do, this is what industrials do for the common stockholder. The price of the common stock is something which results from this process I have tried to describe.

Now, if the rate of return on common stock equity falls below that which, taking account of differences in risk due to the business and due to the capitalization ratio—if that rate of return on common stock equity falls below that which investors can find in other situations, then they will

lose interest in the one under question. The trend will be reversed. The price will do down. I cannot tell you how much. There is a question of degree. But when you have got a trend that is going down, the company in question is soon at a disadvantage with respect to raising capital when that trend runs counter to or below the other sources of funds which are available to investors: I am sorry to be so lengthy, but it is the foundation of everything I have tried to put into my direct and in the answer. So I restated it.

Q. Mr. Katzenbach, you are not telling me if any company is earning 10 percent on its equity capital, that it is equally desirable to a prospective investor at $20 a share or at $10 a share, are you?

941

A. It is all a question of what is available in the market in the way of other securities.

Turning again, Mr. Stewart, to page 4 of my exhibit, 14, you will see that the top group of stocks earns on the average a rate of return of 13.1 percent on equity. These are classified as growth stocks—essentially they are companies which have a very rapid growth record. And, therefore, they have a very substantial need for financing, one which generally will exceed the demand for capital in the lower two groups.

You will find that the prices, or the earnings-price ratio, are relatively low there, because investors, as I explained in my direct testimony, are discounting the future. We find a higher earnings-price ratio associated with the lower returns on equity.

Now, some investors will prefer to forego the growth aspects of the top group in order to achieve a higher yield, and to buy what they consider to be a larger amount of last year's earnings per dollar of price.

Presiding Examiner: Mr. Stewart, do you have any estimate now as to how much longer you might take?

Mr. Stewart: At the present rate, if he keeps arguing about something I have not asked him, I have no idea.

Presiding Examiner: I am not so sure he thinks he is arguing about something you haven't asked him, because I am not so sure the witness understands what you have in mind.

942

That is a problem you will have to wrestle with.

We will recess now until 3:25.

(Whereupon, at 3:15 p.m., a recess was taken, until 3:25 p.m.)

Presiding Examiner: The hearing will come to order, please.

All right, Mr. Stewart.

By Mr. Stewart:

Q. Mr. Katzenbach, on page 157 of the transcript, starting at line 21, you say, "It is also apparent that a return of 7 percent is barely sufficient"—skipping down a little ways—"to prevent an erosion of the earnings remaining for the funds which have been invested in the company's common stock equity by its large body of common stockholders."

I take it that you simply use "erosion" there as synonymous with decline. Am I right? A. I mean decline in the rate of return available for the common stockholder equity, with allowance for the size of the equity.

Q. Without of necessity any judgment as to whether that decline is justifiable or not? A. No. I cannot agree with you there. I think that my previous reference and comparison of other forms of investment available to common stockholders covers that point.

943

Q. Mr. Katzenbach, I didn't mean on your whole position. I mean in your use of this term at this point. I didn't mean to make it as broad as you seem to think.

You would not say, I take it, that an allowance on equity capital which would result in reduced earnings on common would, under all circumstances, be unfair, would you? A. Not if the figure which was reduced was more than necessary to begin with.

Q. If, for example,—and this is purely hypothetical—I am not intending to apply it to Tennessee—you had a company which was starting business, and under the circumstances of the case it was quite debatable as to whether or not that was going to be a successful business, and the regulatory authority involved took that into consideration in setting a high rate of return, you would not maintain, I take it, that if it turns out to be a successful business ,and becomes a stable business, that the company is still entitled to the same high rate of return on equity.

Presiding Examiner: All other factors remaining equal?

Mr. Stewart: Yes, sir.

The Witness: Well, of course, if the success of the venture is debatable in the beginning, there is no assurance the company would necessarily reach the rate of return allowed by the Commission.

944

By Mr. Stewart:

Q. That is right. And that is, of course, an additional risk involved. A. You asked me to assume in your hypothesis that you had a relatively risky, or at least a debatable situation.

Mr. Werner: Excuse me. Mr. Reporter, would you read the witness' first answer back?

(The answer, as recorded, was read by the reporter.)

By Mr. Stewart:

Q. Mr. Katzenbach, it doesn't seem to me you answered the question.

Presiding Examiner: Read the question and the answer.

(The question, and answer, as recorded, were read by the reporter.)

The Witness: I think that would be grossly unfair. In other words, here you have a debatable proposition, and you have a high rate of return, and it works out, and so you take it away. It is like your putting a money on the horse race when the odds are 10 to 1, and the horse wins, and they say you get 5 to 1 because the horse won, didn't it?

By Mr. Stewart:

Q. So you are entitled to the rate of return based on the high risk in perpetuity? A. No. As I understood your question, you put it to me

945

this way, Mr. Stewart. We have a hypothetical debatable situation, which is taken into account in the setting of a high rate of return. The—actually, the venture turns out to be a success, but you asked me then if it is a success, is it entitled to the rate of return which it hoped for and was allowed for in the beginning, and I say, yes, it is.

Q. Excuse me, Mr. Katzenbach. I didn't mean that. I assumed that you meant—that you would understand that I was talking about the normal regulatory process, and my question applied to a later period and another decision by the Commission—not to take anything away from the company. A. If, over a period of years, the character of the business enterprise changes, from the standpoint of

risk and position, then the rate of return requirement will and should properly vary.

956

By Mr. Spalter:

Q. Mr. Katzenbach, did you compute the coverage before taxes for the actual situation as it existed as shown on page 2 of your Exhibit 13, in addition to the one you put into the record? A. Yes.

Q. With respect to page 3. Can you give us the figures for page 2, please? A. I would be glad to.

Presiding Examiner: This is for what exhibit?

Mr. Spalter: Page 2, Exhibit 14.

The Witness: Referring to page 2 of Exhibit 14, I will read figures representing coverage of interest calculated on a basis before deducting income taxes. The figures I will give you will represent a column running from line 1 through line 9 for—to correspond with the 6 percent column now designated as column 5. Here are the figures: 5.71, 5.38, 4.93, 4.60, 4.33, 4.23, 3.98, 3.74.

Excuse me. Did I say 4.33 twice? There should be two 4.33's.

Presiding Examiner: Now, 4.33 was mentioned for the first

957

time on line 5?

The Witness: Yes, it occurs again, Mr. Examiner, on line 6.

Presiding Examiner: Then line 6 should be 4.33 instead of 4.23? And line 7?

The Witness: 4.23.

Presiding Examiner: And line 8?

The Witness: 3.98.

Presiding Examiner: Line 9?

The Witness: 3.74.

Now, we have one corresponding figure for the 6.6 per-cent column, Line 7. The figure is 4.77. Turning now to column 7, line 8, the figure is 4.65. And, finally, turning to column 8, line 9, the figure is 4.55.

. . . . . .

978

Felix I. Shaffner

was called as a witness and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Spalter:

Q. Would you please state your name for the record?

979

A. F. I. Shaffner.

Q. Dr. Shaffner, do you have before you a document consisting of thirty-three pages containing therein questions and answers? A. Yes, sir.

Q. Do the answers as contained therein represent the answers you would give to those questions if those questions were asked you orally at this time? A. Yes, sir.

Q. Do you adopt the testimony contained in those answers as your testimony in this proceeding on rate of return? A. Yes, I do.

Mr. Spalter: Mr. Examiner, I at this time ask that the testimony contained on the 33-page document be copied into the record as if read.

Presiding Examiner: Is there any objection?

(No response.)

Presiding Examiner: The prepared testimony of the Witness F. I. Shaffner will be copied into the transcript at this point as though read.

Mr. Littman: Mr. Examiner, if I may say something at this point, it may be of help. I would like to request that this prepared testimony be keyed into the record by the page numbers in the usual fashion.

Presiding Examiner: Yes.

980

Mr. Littman: Unfortunately, that was not done earlier in this proceeding.

Presiding Examiner: I assume that the reporter always does that.

The Reporter: Yes, sir.

Mr. Littman: It made it difficult for us to trace the prepared testimony to the page of the transcript. I think it is especially important that this be done, because this morning I will have to, of course, of necessity refer to the page of the prepared testimony, and it will not be easy to follow the cross-examination unless there be a key from the one page to the other.

Presiding Examiner: Yes, sir.

(The prepared testimony of Dr. Felix I. Shaffner, on behalf of the staff, follows:)

981

Prepared Testimony of F. I. Shaffner

(1)

Q. Please state your name and address. A. F. I. Shaffner. I reside in Arlington County, Virginia.

Q. What is your present position? A. I am a public utility specialist on the staff of the Federal Power Commission, and head of the Finance Section of its Division of Finance and Statistics in the Office of the Chief Accountant.

Q. Please describe your qualifications. A. After Harvard Business School my first job was as a security analyst with

the Old Colony Trust Company of Boston in the summer of 1925. In 1928, I served as economic consultant and adviser to President Edgar Lawrence Smith of the Investment Managers Company, an investment trust. From 1928 to 1937, I was a member of the faculty of History, Government and Economics at Harvard University, teaching corporation finance, money and banking, government regulation of industry, international trade and finance and economic analysis. From 1938 to 1943, I was Lecturer in Economics at the School of Commerce, Accounts and Finance and, during part of this period, the Graduate School of Business Administration at New York University, teaching a graduate course in government regulation of industry and economic analysis at both the undergraduate and

graduate level.

During the war, from 1942 on, I was senior economist with the New York Regional Office of Price Administration. In 1945 and 1946, I was on a Bureau of the Budget assignment with the Office of Rent Control in the New York Regional Office.

In 1946, I moved to Washington where I became a member of the Real Property Review Board, and later vice-chairman of its successor, the General Review Board of the War Assets Administration, and its successor, the General Services Administration. This involved recommendations to the Administrator (based in part upon an analysis and evaluation of the capitalization of earning power of properties in various alternative uses) of proposed terms of disposal of many large items of surplus government property, including pipelines, such as the Big Inch and Little Big Inch, oil refineries and related facilities,

(982)

carbon black plants, etc. In 1949 I became a Chief International Economist for the Economic Cooperation Administration and its successor agencies, specializing in problems of international finance and industrial rehabilitation abroad, arising from the Marshall Plan and the Mutual Security Program. Beginning in 1951, I have taught investments and security analysis at both the graduate and undergraduate level at the George Washington University, where I am a member of the faculty of Business Administration, with the status of professorial lecturer.

983

In 1954 and 1955, I served as economic consultant and adviser on investments and related problems to private industry, and later, to the U. S. Department of Commerce.

From the beginning of 1956 to about the

middle of 1958, I was deputy director of research and senior investment analyst for an investment banking and brokerage firm, which was investment adviser for over $100,000,000 of invested funds, including a mutual fund, and since mid-1958, I have been on the staff of the Division of Finance and Statistics in the Office of the Chief Accountant of the Federal Power Commission.

In 1925, I graduated with honors in Economics, special field Money and Banking, from Harvard University. The same year, I completed the requirements for the Master's degree for work done in the Harvard Graduate School of Business Administration and Graduate School of Arts and Sciences. I received that degree, in absentia, in 1926. From 1925 to 1928, I was a Rhodes scholar at Oxford University and received in 1928 the research degree of B. Litt., in International Finance.

From 1928 to 1933, I continued my graduate studies at

Harvard and in 1933, I received a Ph. D. degree from Harvard in the field of Investments.

I have published a book on Investments called "The Problem

of Investment," and I am co-author of a monograph on financial and business cycles, published originally by the Harvard University Press, which has since been reprinted three times, most recently in September 1958.

I am, or have been, a member of the American Economic Association, the American Finance Association, the American Accounting Association, and American Statistical Association, and the Washington Society of Investment Analysts, and am chairman of the Program Committee of the latter organization.

(4)

Q. What previous experience have you had in connection with rate of return testimony? A. I have represented the U. S. Department of Justice as an expert witness on rate of return in litigation before the Federal Tax Court. This was the case of *The Finnie Co. v. United States*, U. S. Tax Court Docket No. 665-R, and was tried in the spring of 1958. I testified on rate of return in the FPC hearings on *Murphy Corporation*, (G-9548, *et al.*), *Hunt Oil Company*, (G-9065, *et al.*), and *Middle States Petroleum Corporation*, (G-9174, *et al.*). I was also responsible for the rate of return exhibits and prepared testimony in the FPC hearings on *Hassie Hunt Trust*, (G-9554, *et al.*), and *Bayview Oil Corporation*, (G-9417, *et al.*).

Q. I show you now a two-page exhibit marked "Selected Common Stock Price Indexes, 1943-1959, Computed by Standard &

985

Poor's Corporation." This has been numbered Exhibit 20 for identification. Was this prepared by you or under your direction? A. It was.

Q. I show you now a 39-page exhibit titled "Tennessee Gas Transmission Company, Docket No. G-19983, Cost of Capital and Rate of Return Study, March, 1960." This has been marked Exhibit No. 21 for identification. Was this prepared under your direction? A. It was.

(5)

Q. I show you a one-page exhibit titled "Return Earned on Average Book Value of the Common Shares—10 Natural Gas Pipe Line Companies." This has been marked Exhibit No. 22 for identification. Was this prepared under your direction? A. It was.

Q. I show you a one-page exhibit titled "Tennessee Gas Transmission Company, Earnings-Price Ratios 1950-1959." This has been marked Exhibit No. 23 for identification. Was this prepared under your direction? A. It was.

Q. I show you a one-page exhibit marked "Tennessee Gas Transmission Company and Consolidated Subsidiaries Consolidated Capitalization, February 29, 1960." It is Exhibit No. 24 for identification. Was this prepared under

986

your direction? A. It was.

Q. What purpose are these exhibits intended to serve? A. It is hoped that they will provide the Examiner and the Commission with information and data which will assist them in arriving at a fair rate of return for Tennessee.

Q. Are there any specific criteria or principles involved

here? A. There are. It seems to me that, from the point of view of a regulatory agency such as the Federal Power Commission, the fixing of a fair rate of return involves a consideration of the interests of both

(6)

investors and the consuming public. The rate of return should not be so high as to place an unnecessary burden on consumers, or give rise to unusual or speculative profits. But it must be high enough to insure investor confidence in the financial soundness of the enterprise, and sufficient to maintain its credit standing so that it may be able to raise the funds needed to permit the carrying out of its public duties and responsibilities. The determination of a fair rate of return in accordance with these criteria necessarily requires the use of judgment and the consideration of all facts which are relevant to the subject.

Q. Did you have any judicial decisions in mind in

connection with the statement of principles you have just made? A. I had in mind the decisions of the Supreme Court of the United States in three landmark cases. The first was the so-called Bluefield decision, or Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia, 262 U.S. 697, 692. The second was the Hope decision, in Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591, 603. The third was the decision in Federal Power Commission v. Natural Gas Pipeline Company, 315 U.S. 575, 586.

Q. Do you believe that the rate which will attract capital is constant? A. Not necessarily. It may be subject to change and it can be influenced by many circumstances. Although investors are not a

homogeneous group, but rather represent a broad spectrum of varying objectives and degrees of knowledge and sophistication, there are, from time to time, changes in what might be termed the dominant mood or attitude of most investors. For example, at certain times, particularly when the market is uncertain or depressed, investors may be primarily interested in liquidity and assumed income, such as in 1932 and 1949. On the other hand, there are times, particularly those of market exuberance, when it would appear that many investors

were less interested in income and more interested in securities which provided the prospect of capital appreciation. This was apparently the case in 1929, and to some extent appeared to be the situation in 1956 and 1959. In the light of circumstances such as these, a regulatory commission should provide a rate of return on capital which, over a reasonable time period, will be sufficient to attract needed investment funds to the enterprise concerned.

Tennessee Gas Transmission Company has had frequent occasion to attract investment capital. The determination of a fair rate of return in such a case calls for the use of informed judgment as applied to the relevant facts. It is my hope that I may provide useful assistance in this process.

Q. Dr. Shaffner, will you please turn to Exhibit No. 20 for identification? What is the purpose of this exhibit? A. The purpose of this exhibit is to provide the Examiner and the Commission with data on the movement and history of selected stock group price indexes for specific time periods and to provide them with certain background data concerning the comparative price behavior of

(8)

natural gas pipeline stocks and that of the stocks of other selected industry groups. Thus this exhibit may give assistance to the Examiner and the Commission in relating the price movement of natural gas pipeline stocks to that of other

989

selected groups and will provide a basis for comparison.

Q. What does this exhibit demonstrate? A. This exhibit shows the relative price performance from 1943 through 1959 of Standard & Poor's natural gas pipeline stock index compared with those of other regulated industry groups and with the Standard & Poor's 425 industrial stock index.

Q. Are these indexes all related to a common base? A. Yes. They are all related to the same base period, which consists of the years 1941 through 1943, and the price indexes for each group are so calculated so that the base period 1941-1943 index is equal to 10. The base value for each group is the average of the weekly group values for the period 1941-1943. A subsequent group value is expressed as a relative by dividing it by its base period value and multiplying the resulting quotient by 10.

Q. What is the source of the data for this exhibit? A. The source is Standard & Poor's "Statistics—Security Price Index Record," the 1957 edition, the 1959 Supplement to the 1957 edition and, for 1959, the monthly supplements entitled "Current Statistics." Data on these groups are also published weekly in Standard & Poor's publication "The Outlook."

(9)

Q. Where can the names of the companies included in the indexes be found?

990

A. They may be found in the sources just mentioned. A recently published list of the names of the companies included in these and other group indexes maintained by Standard & Poor's may be found on the last page of the Cumulative Index to the Outlook dated November 16, 1959.

Q. What companies are included in the Natural Gas Pipe Lines stock index? A. The companies are: El Paso Natural Gas, Mississippi River Fuel, Northern Natural Gas, Panhandle Eastern Pipe Line, Southern Natural Gas and United Gas Corporation.

Q. How about the 425 Industrial Stock Index? A. This index is reported to consist of 79 groups of stocks, the constituent companies of which are named in the Cumulative Index to The Outlook dated November 16, 1959.

Q. What does this exhibit show? A. It shows that, from 1943 through 1959, Standard & Poor's Stock Price Index of Natural Gas Pipelines has risen to a higher level than that of any of the Standard & Poor's Stock Price Indexes of other regulated industries: Natural gas distributors, railroads, electric utilities and telephone and telegraph.

Q. In specific terms how much higher had the Pipeline Stock Price Index risen from the 1941-1943 base period to 1959, for example, as compared with the indexes of the other regulated industries shown?

991

(10)

A. Compared with the 1941-1943 base period index of 10, the Natural Gas Pipeline stock price index had risen by the year 1959 to an average level of 73.11, representing an increase of 631 per cent over the 1941-43 base period. The corresponding increases in the indexes for the other regulated industries for the same period were: 411 per cent for the natural gas distributors' index, 251 per cent for the

railroads', 233 per cent for the electric utilities' and 84 per cent for the telephone and telegraph stock index.

This means the Natural Gas Pipeline stock index during this period showed an increase that was approximately 54 per cent greater than that of the natural gas distributors, 151 per cent greater than that of the railroads, 171 per cent greater than that of the electric utilities and 651 per cent greater than that for the telephone and telegraph stock index.

Q. How does the increase in Standard & Poor's Natural Gas Pipeline stock index compare, during the period 1941-1943 to 1959, with the 425 industrial stock index? A. The 425 industrial stock index increased by 514.5 per cent during that period, so the 631.1 per cent increase in the pipeline index exceeded that of the 425 industrials by 22.7 per cent.

Q. Are not industrial stocks as a whole generally regarded as having better growth prospects than those of regulated

industries? A. Yes. And it may be added that between 1941-1943 and 1959 (except for the first part of this period) Standard & Poor's industrial stock price index generally lived up to this expectation with respect to all the regulated industries except one.

Q. What was the exception? A. The natural gas pipelines, using Standard & Poor's index figures. The gas distributors' group also did comparatively well through 1954.

Q. How would an investor have fared who put $10,000 into each of the industry groups covered in this exhibit at the average 1941-1943 prices and proportioned his investment according to the same weights used by Standard &

(992)

Poor's? Assume he held these investments until 1959 and realized the average 1959 prices as shown by the respective industry indexes. A. His $10,000—1941-1943 investment in telephone and telegraph stocks would have been worth $18,430 in 1959, on the assumptions stated. In electric utilities his $10,000 would have become $33,300. In railroads his $10,000 would have increased to $35,090. In natural gas distributors his $10,000 would have expanded to $51,120. In industrials his $10,000 would have grown to $61,450. And in natural gas

993

pipeline stocks his $10,000 would have been worth $73,110. This represents a capital gain that exceeds by $54,680—or nearly 5½ times his original $10,000 investment—the capital gain he could have made in telephone and telegraph stocks during the period. These calculations, of course, make no allowance for commissions or taxes paid, on the one hand, nor for dividends received during the period.

(12)

Q. Will you please turn now to Exhibit No. 21 for identification. What is the purpose of this exhibit? A. This is the basic exhibit which the staff has introduced, with some changes from time to time, to support most of its rate of return testimony in nearly every recent pipeline company proceeding before this Commission in which rate of return has been an issue. Its primary purpose is to facilitate the development of the capital attraction approach to the question of rate of return.

Since corporations raise a substantial part of their long-term capital by issuing securities to the investing public, a fair portion of this exhibit deals with the returns afforded by various securities and types of securities at prices prevailing in markets for securities.

Q. Would you please go through this exhibit and explain it? A. The exhibit is divided broadly into five parts. I

994

will first describe each part briefly and then will go back and cover it in more detail.

The first part, from pages 1 through 8, provides data from 1920 to date on the historical record of the cost of debt capital to four classes of borrowers: the United States Government, industry, railroads and public utilities.

The second part, from pages 11 through 19, provides a record of certain details of the experience of the natural gas pipeline companies in raising funds through public sale of their securities.

(13)

The third part, from pages 21 through 32, gives detailed summary information with respect to the scope, operations and financial experience for several years for each of ten natural gas pipeline companies, including Tennessee Gas Transmission Company, which is covered on page 29.

The fourth part, from pages 33 through 35, provides data from 1945 through 1958 on the capitalization and capital ratios of the ten pipeline companies, individually and collectively.

The fifth part, from pages 36 through 39, gives monthly data from 1940, or when first available, to date on earnings-price ratios of the ten pipeline companies, and for portions of this period, certain other pipeline companies.

Q. Now will you go back and cover each part separately? A. Yes.

995

Returning to the first part, at pages 1 through 8, pages 1 and 2 give a chart and the supporting data since 1920 of United States Treasury bond yields. These are included

as showing the minimum costs of borrowing, under the most favorable conditions with respect to risk regarding ultimate redemption, and also as showing the direction and extent of the trend in the movement of interest rates. Page 3 describes Moody's bond yield averages and gives the key to Moody's bond ratings for the industrial, railroad, and public utility bond averages which follow on pages 4 through 8. In this connection it is interesting to note that Moody's explicitly describes their bond ratings as measures of long-term risks, in the following language, taken from page V of Moody's Manuals:

(14)

"Investors using the ratings should not, therefore, expect to find in them a reflection of statistical factors alone. They are not statistical ratings, but an appraisal of long term risks, such appraisal giving recognition to many non-statistical factors."

To continue with this section, pages 4 through 8 provide in chart and data form the record since 1920 of the average yields on representative industrial, railroad and public utility bonds, as measured by Moody's bond yield averages. Two points may be noted here. The first is that, of the 40 bonds currently employed in Moody's public utility bond averages,

996

and listed on page 8, only two are bonds of natural gas pipelines, one of them being the Tennessee Gas Transmission 4¼ per cent bonds of 1974, and both of them are rated Baa.

Second, the charts on pages 5 and 7 (and also on page 1) show that while bond yields were in a general decline from 1920 to 1946, they have been moving upward since 1946. In this respect they show a marked contrast to earnings-price ratios on the common stocks of natural gas pipe-

lines, charted on page 39, which have been generally declining since 1942. I will comment further on this later.

The data on bond yields in this section, shown on an annual basis for 1920-1959, and on a monthly basis from 1957 to date, provide background data against which the borrowing record and experience of Tennessee Gas Transmission Company may be evaluated.

Q. Will you now describe the second section of the exhibit? A. Pages 11 through 19 show, for 1945 to date, the experience of the natural gas pipeline companies in raising capital through the sale of non-convertible securities to the investing public.

(15)

On the chart on page 11, there have been spotted the major public offerings of natural gas pipeline mortgage bonds. The chart may be used to locate each issue by date and by yield

to the buyers at the public offering price. The chart also includes Moody's "A" and "Baa" public utility bond yield averages for purposes of reference and comparison. Every issue of mortgage bonds shown on the chart is keyed by number to the corresponding numbered issue in the table on pages 12 and 13. It would appear from the chart on page 11 and the table on pages 12 and 13, that where pipeline companies issue mortgage bonds their costs will be above the "Baa" level, although many of their offerings are rated "A".

For example, Tennessee Gas Transmission has 17 mortgage bond issues listed on the chart and the accompanying table on pages 11, 12, and 13. Tennessee issues are numbered 3, 4, 5, 8, 10, 12, 15, 17, 18, 21, 23, 27, 29, 30, 34, 40 and 47. They are all rated "A" by Moody's. In addition, there is one issue of Tennessee mortgage bonds, the 3¾'s

of 1947, dated September 1, 1954, of which $14,500,000 face amount was outstanding on December 31, 1959, which were privately placed.

Q. What is on pages 14 and 15? A. These pages give a list and the detail of major public offerings of pipeline debentures since July 1950. There is no chart of these offerings corresponding to the chart on page 11. There are seven Tennessee offerings on this list, numbers 5, 8, 15, 16, 18, 23 and 28, all rated "Baa" by Moody's. In addition to these, there is one issue

of Tennessee debentures which is not on the list since it was issued privately. These are the 3¾'s of 1966, dated June 1, 1948, of which $11,278,000 face amount were outstanding on December 31, 1959, according to a Tennessee prospectus dated February 15, 1960. The fact that the Tennessee debentures publicly sold received "Baa" ratings provides a basis for comparison of these offerings with the "Baa" Moody's bond averages.

Q. What is shown on pages 16 and 17? A. These pages show the pipeline industry experience since May 1945 in raising capital by means of straight preferred stock issues. There are ten issues of preferred stock by Tennessee on this list, numbers, 1, 4, 6, 8, 10, 15, 19, 23, 25, and 30. The more recent experience of pipeline companies which shows the approximate present state of the market and the cost of preferred stock capital is indicated by the last four offerings on the list on page 17, all being issued in 1959.

Q. What is shown on pages 18 and 19? A. Here are two lists of principal offerings of natural gas pipeline common stocks from 1946 to date. The list on page 18 shows public offerings not using rights. The list on page 19 shows

common offerings through rights to stockholders. No rights offerings are shown for Tennessee. Of

999

the list on page 18, eleven issues of common stock by Tennessee are shown, numbers, 1, 2, 5, 9, 11, 12, 14, 16, 18, 21, and 23. Pipeline common stock offerings have not been numerous. There

(17)

have been only eight such offerings since 1954, and three-fourths of these were by two companies, Transcontinental and Tennessee. The most recent offering was one of 1,600,000 common shares on February 16, 1960, by Tennessee at $34.50 per share. Gross proceeds were $55,200,000. I have been informed that this offering was quickly absorbed, that the offering was oversubscribed and that the stock was quoted at a premium on a when-issued basis.

Data such as this indicate to me that equity capital is available in substantial quantity for pipeline companies with an established record, such as Tennessee.

Q. Will you now describe the third part of this exhibit from pages 21 to 32? A. This part of the exhibit is intended to provide detailed financial and related information and data for a group of ten leading natural gas pipeline companies. Each is a major company. The companies as a group are broadly comparable and are subject to the jurisdiction of the Federal Power Commission. For 1958, gas operating revenues of this group of companies totalled over 50 per cent of such revenues for 41 "natural gas pipeline companies" as designated and

1000

reported by the Federal Power Commission in its annual publication "Statistics of Natural Gas Companies."

Additional criteria for the selection of these ten com-

panies are: (1) public common stock ownership; (2) they are primarily operating companies rather than holding companies; (3) they publish earnings statements regularly; (4) ready availability of common stock price

quotations; and (5) they have paid dividends on common stock for a period of time sufficient to establish some sort of pattern of regularity.

Each company is covered on a separate page. Information and statistical data for each company is set forth to include: (1) a description of the origin, business operations and markets; (2) common stock outstanding, exchanges on which it is traded, and the number of common stockholders; (3) a table showing annual data for an extensive recent time period covering operating revenues, earnings per share, dividends per share, dividend percentage payout of earnings, high, low, average and closing market price, adjusted for stock splits and dividends, dividend yield, year-end book value and earnings price ratios, the latter of which are also covered in the last section of this exhibit.

Q. Is Tennessee one of the ten companies covered in this section?

A. Yes. It is one of the largest companies, and is covered on page 29.

Q. Will you now describe the next part of this exhibit?

A. The fourth part, which extends from pages 33 through 35, provides data on the capitalization and capital ratios of the ten pipeline companies just described and for 41 pipeline companies.

Page 33 has two tables. One shows the capital ratios in dollar amounts and as a percentage of total capitalization

for the ten pipeline companies combined, and for each year from 1945 through 1958.

(19)

The second table shows the capitalization in dollar amounts and as a per cent of the total for each component of the capitalization for the end of 1958 for each of the ten companies. Page 34 shows, for each of the ten companies, and for the period 1945 or the earliest available year through 1958, the types of capital in terms of percentages of total capitalization. Page 35 provides corresponding ratios for each type of capital, from 1945 through 1958, for a composite of the industry taken from the Federal Power Commission annual publication entitled "Statistics of Natural Gas Companies."

Q. What conclusions may be drawn from the material?
A. Several conclusions would appear to be in order.

First, the natural gas pipeline business, as represented

by these companies, has shown steady and fairly rapid growth over the last decade and a half. This growth has been reflected by substantial increases in operating revenues, year-end book values, earnings, dividends, and in the market value of representative common shares, as shown in my previous exhibit. Not least, it has been shown in the growth of total capitalization of the ten pipelines from $295,571,000 in 1945 to $5,010,008,000 in 1958, an increase of 1595 per cent. This percentage increase has exceeded the 168 per cent increase in Gross National Product from $213.6 billion in 1945 to $441.7 billion in 1958 by 849 per cent. From my experience these characteristics of growth and stability are of the type which are sought by investors in common stocks. It may be observed that the experience of Tennessee

does not compare unfavorably with these general trends. In some respects it has been much better.

For example, 1959 operating revenue of $463.06 million was 32.36 times 1945 revenues of $14.31 millions; year-end book value of $14.70 per share for 1959 was 8.6 times the $1.71 figure for 1945; average earnings per share for 1957-1959 of $1.82 were 3.37 times the average earnings per share of $.54 for 1945-1947.

Second, pipeline companies are generally high leverage companies and, in recent years, they have increased their

leverage by trading on the equity.

For example, the 41 companies listed on page 35 of the exhibit have reduced their percentage of common equity from 55.4 per cent in 1945 to 29.6 per cent in 1958. The ten companies in the exhibit have reduced their composite common equity percentage to only 24 per cent in 1958, and the two largest companies among the ten, El Paso and Tennessee, the only two with a December 31, 1958 capitalization in excess of $1 billion, have a year-end 1958 average common equity of 20.7 per cent. Only two other companies among the ten exhibit companies have a lower percentage of common equity for that date.

In view of the rapid growth of the industry, the fact that debt financing has important income tax advantages which are reflected in an advantageous cost of capital, and the absence of any serious business and economic setbacks in recent years, the industry and the public have not been without benefits from this pattern of financing. But it is something of an anomaly that the pipeline industry has employed more leverage than the electric power industry, in which common equity

generally averages 36 to 38 per cent for companies in three different-sized groups with respect to annual operating revenues. And there are some authorities, including the well known

1004

team of Graham and Dodd who hold that "the recent financing of the major pipe lines for transmission of natural gas appears to us to contravene the basic principles of prudent investment in fixed income securities" (Security Analysis—Principles and Technique, by Benjamin Graham and David L. Dodd, McGraw Hill Book Co., Inc., 1951 ed., p. 337).

Q. Will you now describe the last section of this exhibit? A. The fifth section, from pages 36 through 39, provides data on earnings-price ratios. The composite earnings price ratios for the pipeline industry are tabulated on pages 36 through 38 for the companies listed on page 37. The period covered is 1940 to date. The method of calculating one of the latest monthly ratios on a composite basis for the ten pipeline companies is shown on page 38. On this page is also shown the dividend rates, dividend yields, and dividend payout ratio in relation to earnings.

Q. What is an earnings-price ratio? A. It is the relation between earnings per common share and the spot or average market price. It is sometimes referred to as the "earnings yield" and is computed in the same way as a dividend yield, except that instead of dividing the dividend by the market price, the earnings are divided by market price. If a company paid out as dividends exactly what it earned, the earnings yield—or the earnings-price ratio—

and the dividend yield would be identical.

(22)

Q. What is the use and significance of an earnings-price ratio? A. Many investment advisory services and security analysts regard earnings-price ratios as a reflection of the rate at which investors are capitalizing earnings from investments in common stocks. They are used to compare one stock with another and provide a measure of what it takes in the form of earnings to induce investors to buy common stocks. From this point of view, they provide an indication of the cost of capital in the form of common stocks.

Q. Can the earnings-price ratio be used in any other form? A. Yes.

The reciprocal of the earnings-price ratio is the price-earnings ratio, or the price divided by earnings and expressed as a multiple, whereas the earnings-price ratio is expressed in percentage terms. The price-earnings ratio is a basic analytical device widely used by investment advisory services and security analysts to determine and compare the relative merits of common stocks. Moody's, Standard & Poor's and other financial investment advisory services regularly use and publish price-earnings data in their statistical analyses, and I, myself, have used it as an important analytical tool

in my college teaching over many years and in my own work as a practicing security analyst.

The price-earnings ratio could be described as the number of dollars which investors are paying for an equity in a dollar of the earnings of a particular company. From

this standpoint, it helps provide an indication of the cost of capital in the form of common stock.

(23)

Q. How are the earnings-price ratios shown in your exhibit calculated by the staff? A. The earnings-price ratios of companies considered to be representative of the pipeline industry and shown on pages 36 and 37, are composite or weighted average ratios calculated from the market prices for the stocks of each of the companies as of the end of each month, in relation to the latest statement of earnings per share on a "12 months ended" basis available at the time of the calculation. In effect, it is the total earnings of all outstanding shares of common stock as related to the total month-end market price of all outstanding shares which provides the monthly earnings-price ratios set forth on pages 36 and 37. For purposes of illustration, the method employed in calculating the individual and composite earnings-price ratios for the ten pipeline company common stocks is shown on page 38.

Q. Is there any other part of the exhibit which ties

1007

in with this section of the exhibit? A. Yes. Page 18, and to some extent page 19, which provide data on new issues of common stock by pipeline companies indicate much the same relationship as earnings-price ratios, that is, the relation between current earnings and the price of the stock. Column (k) on page 18 shows the percentage of current or recent earnings to the price paid for stock by the public. Column (m) shows the cost to the company, in terms of earnings, of the common

(24)

stock issued and is adjusted to reflect the cost of issuance of the stock. On page 19, Column (m) corresponds to

Column (k) on page 18 in showing what the public was paying for an equity on earnings. But Column (o), although it does reflect the net cost, in earnings, of each particular issue to the company, does not necessarily indicate the prevailing current cost in terms of earnings of comparable equity capital, particularly when the stock was offered through rights at a price substantially below the current market price of the stock.

Q. What is shown on page 39 of this exhibit? A. The chart on this page is intended to show the trend and the levels at various times from 1940 to date of three series of pipeline common stocks: a listed series calculated from 1940 through 1957, an unlisted series, calculated from

1949 through 1957 and the new series, calculated from 1953 to date. The companies in each series are listed on page 37 and the data charted on page 39 is shown in statistical tables on page 36 and 37.

Q. What has been the trend of these ratios? A. From early 1940 to the middle of 1942, they rose from about 10 per cent to 16.3 per cent. The curve then declines rapidly to 6.6 in January 1946. It rose to 9.4 per cent in January 1948. It fluctuated around 9 per cent until the middle of 1949, at which time it began an irregular downward course, reaching a low point of 5.1 per cent in January 1959. Since then it has been rising somewhat and in January 1960, stood at 6.0 per cent.

(25)

Q. If this chart may be regarded as indicating the cost of common equity capital, or what it takes to attract equity capital, how does it compare with changes in the cost of debt capital? A. If you will compare the chart on page 39 with the bond yields charted on pages 1, 5 and 7 of this exhibit, it can be seen that from about 1946 to the present

the charts of bond yields have been rising, while during most of this time the earnings-price ratios were declining.

Q. What conclusion do you draw from this fact? A. I conclude that the cost of debt capital and the

cost of equity capital can move, and for substantial periods of time in the past, have moved in opposite directions. This downward trend in equity costs is shown not only by the earnings-price ratios on page 39 of my exhibit, but also on page 25 of the monthly "Federal Reserve Chart Book on Financial and Business Statistics" published by The Board of Governors of the Federal Reserve System in which not only are earnings-price ratios for companies in Standard & Poor's composite stock index plotted but also common stock dividend yields for stocks in Standard & Poor's composite stock index, which show a similar downward drift during this period, and yields on Moody's "Aaa" and "Baa" corporate bonds. Moreover, return on net worth of over 1800 manufacturing corporations reporting to and reported by the First National City Bank of New York declined by 47.6 per cent between 1948 and 1958, for which a chart is shown on page 87, of the August 1959 "Monthly Letter on Business and Economic Conditions" published by that bank. This shows return actually earned on net

worth of a large sample of manufacturing corporations has similarly declined in the past decade.

Q. How can the cost of debt and equity capital move in opposite directions when both forms of capital are competing for the investor's funds? A. To some extent, and with some investors, they compete,

but there are large areas in which they do not compete. The largest market for bonds is with institutional investors, many of whom are restricted by law or applicable regulations to investment in bonds, or to a certain prescribed maximum in common stock. The Federal, state and municipal governments must raise all their capital requirements through bonds.

Moreover, bonds and common stock are entirely different forms of investment, from the standpoint of economic theory, from a legal point of view and with respect to taxation. They are subject to different kinds of investment risks which carry a varying weight with investors at different times. In times of depression investors who have a choice prefer bonds, and stocks with very high yields go begging for buyers. In periods of prosperity the opposite situation tends to prevail.

Long-term bonds are importantly subject to two types of investment risk, which affect common stockholders little or not at all. These are the purchasing power risk, and the money rate risk. Long-term bond prices move inversely with money rates. Common stocks, except

for certain defensive types bought primarily for safe income, do not.

A study by the First National City Bank of New York and published in its Monthly Letter for April 1959, at pages 45-46, shows that the following changes took place in the value

of certain types of investments, *after* adjustment for the 16.7 per cent decline in the purchasing power of the consumer's dollar which took place during the period December 1948-December 1958.

The value of New York State 1¾ per cent bonds of 1985 declined by 35.7 per cent.

The value of New York City 4 per cent bonds of 1980 declined by 31.6 per cent.

The value of U. S. Treasury 2½ per cent bonds declined by 29.1 per cent.

Standard & Poor's average for 25 railroad common stocks rose by 105.8 per cent.

Standard & Poor's average for 50 public utility stocks increased by 124.8 per cent.

Standard & Poor's average for 425 industrial stocks rose by 224.9 per cent.

These facts constitute part of the explanation of why during most of this period common stocks were selling at ever higher multiples of current earnings while investors demanded—and received—larger and larger interest yields on their bond investments.

(28).

Q. Do you believe that the compensation for common stock capital should be derived from the current cost of debt money and adding an additional factor for risk?

1012

A. No, I do not. As I have already explained, debt and equity capital are essentially different types of investment and compete with each other only to a limited extent. Most important, the facts show clearly and unequivocally that their relative costs can and do move in opposite directions and have been doing so for some period of years.

Q. What do you say to the criticism of earnings-price ratios that they are based on past earnings while the investor is anticipating future earnings? A. I have three things to say.

First, the price the investor pays for a stock presumably represents the sum total of all his reasons for buying it, in-

cluding his estimate of future earnings. Therefore, his estimate is, in a sense, embodied in the price paid in relation to current earnings, and explains why some investors are willing to pay high multiples of earnings for some stocks.

Second, estimating the future represents forecasting. Many investors do it. Some do it well and others poorly. But no one can really foretell the future and an investor who goes out on a limb and pays a fancy price for some glamour stock, has only himself to blame if the future turns out differently than expected. And the times when investors as a whole seem to be discounting the future a long distance ahead—such as in 1929—and perhaps in 1959—often turn out to lead

to periods of disenchantment in which the only investors without regrets are those who based their decisions on solid facts and did not try to look too far into a murky future.

Third, earnings-price ratios should be used with judgment and discretion. They should not be used on a spot basis, or on a basis of transitory and untypical conditions. In times like the recent past, they should be considered as the minimum return which it takes to attract equity capital, as a floor, so to speak. But since they do show the basis on which investors are willing to buy stocks in relation to known earnings and hence attract equity capital and since applicable Supreme Court decisions set down capital attraction as a criterion of rate of return, I would consider that the Commission would not be following criteria laid down by that body were it to ignore the test of capital attraction.

Q. Please now turn to Exhibit 23 for identification and describe what it shows. A. It shows earnings-price ratios

of Tennessee Gas Transmission Company on a monthly basis, and annually, from 1950 through 1959.

Q. How do the Tennessee earnings-price ratios compare with those of your exhibit companies? A. Generally Tennessee's earnings-price ratios are somewhat below those of the exhibit companies, except in 1953.

1014

For example, the average earnings-price ratio for the ten stocks in the new series for 1953-1959 is 6.44 per cent, while Tennessee's average earnings-price ratio for the same period is 6.20 per cent. It would thus appear that Tennessee

(30)

was able to attract equity capital on somewhat advantageous terms and is a tribute to investor confidence in the company.

Q. Will you now please turn to Exhibit 22 for identification? This is the exhibit titled "Return Earned on Average Book Value of the Common Shares—10 Natural Gas Pipe Line Companies." Will you explain this exhibit? A. The profits ratios earned on average book value in this exhibit are taken from my 39-page exhibit. They are intended to show, for each of the ten companies listed on page 21 of that exhibit, the ratio of reported earnings per share to average book value of the common stock in each of the last ten years.

To illustrate the 15.8 per cent ratio of profits to net worth in 1958 for Tennessee is derived by dividing the earnings of $1.85 per share shown in Column (e) of the table on page 29 of my main exhibit by the average of the year-end book values of $10.93 for 1957 and $12.53 for 1958 shown in Column (k) on that page. The average of $10.93 and $12.53 is $11.73 which, if divided into $1.85, equals 15.8 per cent.

Each of the other percentages set forth is calculated in

the same manner. The results of these calculations give approximately indications of the ratio of net earnings to the common equity investment by each of these companies.

Q. How do Tennessee's earnings on average book value compare with that of the other companies?

(31)

A. Except for 1951, when Tennessee's earnings on book value were lower, and 1953, when they were the same, Tennessee's earnings on book value have averaged about 1.4 per cent higher than those of the other companies in the exhibit—or nearly 15.5 per cent for 1951-1958, compared with 14.1 for the nine other companies.

Q. Will you now turn to Exhibit 24 for identification. Will you please explain this exhibit? A. This exhibit is titled "Tennessee Gas Transmission Company and Consolidated Subsidiaries Consolidated Capitalization, February 29, 1960." It shows and is based on the consolidated capitalization of Tennessee as of February 29, 1960. I have not assumed that convertible preferred stock not converted, has been converted, as Tennessee has. (See Transcript, p. 138) nor have I included any bond issue not yet issued, as Tennessee has (T. 138).

An additional adjustment has been made in the capitalization to include as the equivalent of long-term debt deferred Federal income taxes in the amount of $18,494,427, as of

February 29, 1960. The weighted average cost of Tennessee's debt capital is shown as 2.45 per cent, and the preferred stock .67 per cent.

The allowance for stockholders' equity has been calculated at quarter-percentage intervals from 5¾ per cent up to the 7 per cent requested by Tennessee in this proceeding.

Q. Are you at this time recommending a specific rate of return? A. No. I would note that in the Commission Opinion in the South Carolina Generating Company case, 16 FPC 52, the Commission indicates that it is not necessary for the Commission staff to recommend a specific rate of return where the staff witness has presented ample facts upon which such a value judgment could be based. I have tried to present those facts.

The determination of a fair rate of return for a company like Tennessee should, in my opinion, be undertaken by those in a position to weigh all relevant aspects of the company's situation. This means the Examiner and the Commission. My presentation and viewpoint is primarily that of a financial and investment analyst.

I note that staff witness Zanoff has presented evidence on the minimum bill revenues that accrued to Tennessee during the test year. As indicated by that study, 69.5 per cent of

revenues from jurisdictional pipeline sales and transportation services were virtually guaranteed under the minimum bill provisions of Tennessee's rate schedules. Since this obviously affects the financial risk inherent in Tennessee's operations, it is quite likely that the Examiner and the Commission would want to take these facts into consideration.

In addition, the Examiner and the Commission might also want to consider such aspects of the case as the ratio of common equity to total capitalization. This is a matter which might be considered as relevant and it is one which the Commission has considered in the past.

(33)

Finally, while I agree that the Examiner and the Commission will probably consider the costs of debt capital, which, as has been pointed out, have been rising in recent years, I believe the fact should also be considered that the trend of the costs of attracting common equity capital have been declining for a number of years, as well as the per cent earned on book value by a large sample of manufacturing corporations. It would, in my opinion, be making a serious mistake and would be grossly misreading the facts to assume that because the costs of debt capital have been rising the allowance for common equity capital needs to be adjusted upwards to the same extent and for the same reasons.

Q. Does this conclude your testimony? A. It does.

Mr. Spalter: Mr. Examiner, we offer the witness for cross-examination.

Presiding Examiner: All right.

Tennessee.

Cross-Examination

By Mr. Littman:

Q. Dr. Shaffner, as a preliminary matter, in order to enable us to understand your revised exhibit, which has now been marked as Exhibit No. 24, entitled "Tennessee Gas Transmission Company and Consolidated Subsidiaries, Consolidated Capitalization, February 29, 1960," this exhibit is a revision of an earlier exhibit that had been previously served upon Tennessee, is that right? A. That is right.

Q. We did not get it until last night, so I want to ask a few questions to enable us to see whether we properly understand it and follow it correctly.

What, for the record, is the source of the figures shown in Exhibit 24? A. The source of the figures shown in 24 is, first, a balance sheet which we requested from you and which you supplied us, dated February 29, 1960, which I have here in my hand. Secondly, the source is the Exhibit No. 11 in this proceeding. The third source is FPC Form No. 2. And the fourth source is the prospectus dated February 15, 1960.

1019

Q. Now will you please refer to the first figure here in Exhibit No. 24, called "Long-Term Debt" in the amount of $754,355,739, and tell us what figures or what changes of figures you used to arrive at that particular long-term debt figue? A. D o you happen to have a copy of the balance sheet that you supplied us?

Q. Yes, sir. I have that before me. A. All right. If you will look under "Liabilities," a little more than halfway down, where it says "Total Long-Term Debt," you will find the figure of $737,664,739. Do you find that?

Q. Yes, sir. That is called "Total Long-Term Debt." A. Right.

And then the item immediately b low it is entitled "Notes Payable to Banks," and that is in the amount of $16,691,000. Do you find that?

Q. Yes, sir. A. The sum of those two figures is $754,355,739, which is the figure you inquired about for long-term debt.

Q. All right, we follow you on that.

Now will you go to the line in Exhibit 24 called "Preferred Stock", showing the amount of $182,417,500? What is the derivation of that figure, or what combination of figures did you use to arrive at that total, for the record? A. That is the same as the figure that was used in the

1020

exhibit which was substituted and of which you have the working papers—I'm sorry.

Q. We cannot follow you there. A. No, I'm sorry, it isn't. I had two copies of the Exhibit 24.

Presiding Examiner: Off the record.

(Discussion off the record.)

Presiding Examiner: On the record.

The Witness: If you will again refer to the balance sheet that you supplied us with, dated February 29, 1960, under "Liabilities," the third item down is $89,637,600, which is the difference between the first item of $91,600,000 and the par value of 19,624 shares of preferred stock held for sinking funds in the amount of $1,962,400. The difference is the third item in the balance sheet that you supplied us with. Then the next item immediately below it, the second "Preferred Stock", which is described further, in the amount of $92,779,900.

By Mr. Littman:

Q. Now, the first item you referred to, just so that the record will show what it is, because the record does not contain this balance sheet as an exhibit, is the figure in the amount of $91,600,000, called "Preferred Stock, Par Value $100, authorized 1,123,000 shares, issued and outstanding 916 shares," is that correct? A. Yes, sir.

1021

Q. Now going to the item in Exhibit 24 called "Common Equity" in the amount of $377,967,773, will you tell us what combination of figures make up that amount? A. First, if you will take the fifth, sixth and seventh items in the sheet with which you supplied us—

Q. Would you mind naming those items, because the sheet is not in the record? A. Yes, I would be glad to.

Common stock, par value $5 per share; authorized, 30 million shares; issued and outstanding, 24,978,666 shares (reserve for conversion of preferred stock, 2,508,694 shares), and the amount given under that heading is $124,893,300.

The next item immediately below it on the capitalization with which you showed us is premium on capital stock and other capital surplus, $172,492,274.

The next item under that on the balance sheet that you supplied us is Retained Earnings, and the amount is $86,578,340.

The sum total of that is $382,732,963.

Mr. Werner: Would you give me the total again?

The Witness: Yes. $382,732,963.

Mr. Littman: We cannot follow the derivation of that figure, the sum total of the three.

. . . . . .

1022

Q. Dr. Shaffner, just one further question in regard to the revised Exhibit 24. During the course of your cross-examination to this point, you said; you repeated over and over again, that the sheet, namely, the balance sheet as of February 29, 1960, was supplied to you by Tennessee. Is it a fact that you requested this particular balance sheet; it was furnished to you at your request? A. Yes. We had a conversation on the telephone, in which you asked me for my working papers, and I said I wanted some data from you, namely, a consolidated capitalization and balance sheet.

Q. All right.

Mr. Littman: We will now go forward with the cross-examination, as originally planned, with the preliminary matters out of the way.

Presiding Examiner: Yes. Is there going to be any reference to that balance sheet in the cross-examination?

(1022)

Mr. Littman: There probably will be later on, Mr. Examiner.

Presiding Examiner: Shouldn't the balance sheet be made an exhibit?

1023

Mr. Littman: Oh, I'm sorry. As to the balance sheet?

Let us consider that; now that we understand the derivation of the figures, we can prepare some cross-examination on it, and if it develops that it is necessary, we will certainly present it as an exhibit.

Presiding Examiner: All right.

Mr. Littman: If it is necessary to our further discussion.

The Witness: I would like to say this, Mr. Littman. We got these figures originally from you. We did the best we could with them. We had to use some estimates in some cases which are clearly marked estimated in the working papers that we supplied you with. And if you have the actual data and you know what it is that we want, we will be very glad to substitute your data for our data.

And that is what we, in effect, have done in making this substitution here, but it still isn't a perfect result. We recognize that. Because there are still some estimates in the picture.

Mr. Littman: Very well. Thank you.

By Mr. Littman:

Q. Dr. Shaffner, at page 10 of your prepared testimony, you state as follows:

"Q. Are not industrial stocks as a whole generally regarded as having better growth prospects than those of regulated industries?

1024

"A. Yes. And it may be added that between 1941-1943 and 1959 (except for the first part of this period) Standard

& Poor's industrial stock price index generally lived up to this expectation with respect to all the regulated industries except one.

"Q. What was the exception? A. The natural gas pipelines, using Standard & Poor's index figures."

Then you went on to say:

"The gas distributors' group also did comparatively well through 1954."

Do you recall that testimony? A. Yes, sir.

Q. Will you please define the word "growth" as you used it in giving that answer? Remember, the word "growth" was used in the question. A. "Growth" is a word in every-day usage sometimes slightly, perhaps, abused by brokers in trying to sell stocks. But it means, in general, expansion of some particular data. In this case it was expansion or rise in the price that I was referring to, over a period of time.

Q. You had reference there in that answer, then, to simply the growth as represented by the increase in the market price of the securities of the various groups discussed in your testimony at that point?

A. Exactly. And that is all this exhibit purports to show.

Q. And by "this exhibit" which you hold in your hand—

A. Exhibit 20.

Q. —you mean Exhibit 20? A. Exactly.

Presiding Examiner: May I interrupt there just a second?

I was just looking, Dr. Shaffner, at your question and answer at the bottom of page 10 of your prepared testimony and then at the top of page 11. I am not clear as to what you are saying there. The language is not clear to me. Would I be correct in saying that your statement

means to say, where you state, at the bottom of page 10, that during the cited period, the industrial stock price index generally lived up to this expectation with respect to all regulated industries except one, what you are saying is that the expectation that you are talking about or the development that you are talking about is that industrial stocks did show better growth prospects than those of regulated industries, and if we look at Standard & Poor's industrial stock price index during the cited period, that that was in fact the case; namely, that in the case of all regulated industries the growth was less than that for industrial stocks in general, with one exception; that exception was a pipeline industry?

The Witness: That is right. As shown on the graph. I

should have said all the regulated industries that are here shown. There may be some regulated industries that are not on the graph.

Presiding Examiner: No, I just wondered from the way you phrased the statement as to what you were saying.

Thank you.

By Mr. Littman:

Q. Is it not true that, although you perhaps used the word "growth" in the limited sense as related to the increase in the price of the stock; is it not true that the word "growth" is commonly used in financial circles as including also growth in or increase in earnings and increases in dividends, as well as increase in market price? A. The word "growth" should only be used in respect to some particular factor which is defined, and one objection some people have to the use of "growth" by brokers is that they use it rather loosely and vaguely. It should be particularized and tied down to some particular factor.

As far as investors are concerned, they are primarily interested, I take it, in the growth in price. But the growth in price, in turn, is often the resultant; in fact, generally the resultant of the growth in earnings and in dividends. It has to have some solid basis behind it over a long period.

Q. Pardon me. But growth is sometimes used to encompass all three, is it not—the price, the dividends, and earnings?

1027

A. Yes. It is sometimes used to refer to sales, too, or revenues.

Now, on pages 10 and 11 of your prepared testimony, Dr. Shaffner, you state that, if an investor has bought Natural Gas Pipeline stock shown in your Exhibit 20 in the amount of $10,000 at the average of 1941 to 1943 prices, the total market value in 1959 would have been $73,110, and this would represent a capital gain of some 631 per cent. Is that a correct summary of your testimony there? I am trying to save time by not reading the whole page. A. Now, this would represent an increase, yes, a capital gain of 631 per cent. That figure is on the previous page, on page 10.

Q. Yes.

Now, assume that the stock was purchased in the year 1942. I am speaking now of the purchase of the Natural Gas Pipeline stocks. Then if we divide the elapsed time of 17 years into the 631 per cent, the capital gain increase would be an average of 37.12 per cent a year.

I will ask you to accept my arithmetic subject to check. I note you have a slide rule. I would be glad to have you check me as I go along. A. As how much, did you say?

Q I said 37.12 per cent a year, approximately.

1028

A. Approximately 30 per cent.

Q. Incidentally, Dr. Shaffner, in computing earnings-price ratios, capital gains are not reflected in the computation as earnings, are they? A. No, they are not.

Q. Now, what effect does this past experience which we have just talked about, in which you demonstrate that the capital gains on the natural gas stocks were on the order of 631 per cent over a period of 17 years; now, what effect does that past experience over the year, for a year-to-year period, have on the price of market stock? A. Well, it is not—in effect, the market price is what we are talking about, and the price should increase.

Q. I should have cleared up my question a little bit. Would this kind of a historical experience lead the investor or the security analyst to anticipate similar trends in the future? A. You might or might not, depending on how much of an investigation he had made into the situation. There is a tendency by some people to project past trends indefinitely into the future, but we know that this does not always take place.

Q. But, normally, you would expect the investor to project such trends into the future, would you not? A. Well, that would be the first and, in a sense, the

1029

most superficial thing that he would do, yes.

Q. You refer on page 21 of your prepared testimony to a book called Security Analysts— A. "Security Analysis."

Q. I'm sorry; "Security Analysis, Principles and Technique," by Benjamin Graham and David L. Dood. And I gather that you cite that work with some approval in your testimony. You recall that, do you not? A. Yes.

I may say Mr. Graham, the senior author of this publication, is a man of considerable experience in Wall Street,

and in teaching he is considered probably the dean of American security analysts. I find, for teaching purposes, that I sometimes have reservations about some of his conclusions; but, in general, there is no doubt that he has done more to advance the science of security analysis and to make it a science than perhaps any other man in the country.

Q. He says, at pages 392 and 393 of that book—I just have a short quote here:

"Common stock investment today still places its primary emphasis on future expectations, but much more attention is now paid (than in 1920's) to the longer term past record and the company's financial condition, as warranties of a satisfactory future. In theory, a company may have had an unsatisfactory past and yet possessed

good future prospects—or vice versa. But, in practice, common stock investment, like stock expectation, almost always projects the past trend into the future."

Do you disagree with that statement of general principle?

A. Well, I would say the most unsatisfactory part of his book and of his work has been his attempts to make projections into the future and, in fact, in other publications he has made such attempts which have, I would say, shown very poor results. Not only that, but in his own investment operations, which I watch very carefully, because for years, knowing that he was an outstanding security analyst, I secured from the Securities and Exchange Commission photostatic copies of the annual reports that he filed with the Commission of the stocks that he was buying. And almost invariably he bought the kind of securities that had had a recently terrible past record.

So if you were to project the kind of record as to the

securities he was buying into the future, you would project them down into the ground.

His basic theory of investment, if I may give it to you in a nutshell, is to buy securities that are selling at bargain prices on the basis of a careful analysis of their assets particularly, and he believes in buying securities when nobody else wants them and when their record recently has been bad.

So, in general, the kind of securities he has bought—

1031

and a good example would be Underwood. He has made a heavy commitment in Underwood at a time when its earnings have dropped from about $6 a share to a big deficit. His theory of investment has been one to try to pick up bargains among the wall flowers, among the types of securities that have had a terribly recent record.

So his own theory certainly does not represent any projection of past trends, because the trends of most of the securities that he bought were pretty bad.

Q. In other words, you feel he would have done much better had he used, had he invested in companies that showed a projection upward, growth upward, based on past trends than those showing the opposite; is that correct? A. No, I don't think so. Actually, he did extraordinarily well. He started out in 1934 with $50,000, and he ended up with about $8 million, and he virtually liquidated his company in 1956 and has retired to California to a well-earned rest.

But he did confine himself to this kind of securities. And I have noted the fact that he always avoided the growth stock type of situation because, as a matter of fact, he in his book issues strict warnings against buying growth stocks, on the theory that the future growth has already been so over-discounted in the price that an investor is taking a serious risk in buying such stocks.

1032

And I think if you would give me a little time, I would be glad to find you the appropriate quotation on this subject.

Actually, he is allergic to growth stocks, and he never purchased any in his portfolio, as far as I know.

Q. Well, maybe he is an exponent of the old adage that, you do as I say and not as I do.

Well, without going into Graham and Dodd's personal portfolio, I take it they did pretty well, in any event. A. They did very well.

Q. They make this one statement on page 396:

"The value of a stock does not depend on what it is going to earn this year or next but on its expectable average earning power and the dividends over a fairly long period of time and on its general prospects over the still longer period."

Do you agree with that proposition, Dr. Shaffner? A. I think if it could be done, it would be a fine idea. The difficulty is in the doing of it, and Graham has had no better success in it than anybody else, and in his own personal investment experience he avoided making projections and avoiding stocks that were having rapid growth trends in earnings.

Q. But he certainly made predictions as to what he expected the stock to do in the future, and apparently he did quite handsomely on the basis of his own personal

1033

projections of what those stocks would do, did he not? A. Yes.

Q. Was your answer Yes to that? A. Yes. His expectation was that the stock would do much better than it had done in the past.

Q. And that is, generally speaking, of course, what the investor is always looking for, that pot of gold at the end of the rainbow where the stock will improve. He is looking at the future, is he not? A. That is what he hopes for, but in many cases there is little more than hope.

1034

Q. Well, I know; I realize that hindsight is better than foresight. But that is always what an investor is seeking, a growth in the future, is it not? A. I will have to qualify that, because there are a large number of investors that are not particularly interested in future growth. So this idea that you can summarize all investors under a particular composite and say this is what investors are after; there, investors are just as different as people, because they are people. And some of them want growth and are willing to take an infinitesimal return today, and some of them need the maximum return today because their life expectancy is not very long and they need all the income they can get, and they are not particularly interested in growth stocks.

Q. First, confining ourselves now to common stock investments, I appreciate, as you have said, that there are some people who are interested more in earnings than in capital gain and some vice versa. A. And some are interested even more in dividends than in earnings.

Q. Yes.

But all classes of investors in common stocks make their own projections into the future, expecting and hoping to obtain larger capital gains and larger earnings or larger dividends, whichever of the three they are interested in, in the future; is that not true?

1035

A. Mr. Littman, I have had considerable experience with investors. I have advised them and I have served as

advisor to their advisors over a period of years. And the kind of projections that investors make, I assure you, in most cases it would be difficult to dignify by the term "projections." They invest their money, they hope for the best, but they keep their fingers crossed.

Q. But they all—well, the investor does not buy a common stock unless he feels that there will be growth in one of those three items or in all three of them, is that not true; is that not what he is attempting to determine, which of the stocks that he should buy today will yield the best results down the road and into the future? A. That is a logical theory, Mr. Littman. But I can show you some charts of some stocks whose performance has been so consistently poor—and I will mention one by name—Holland Furnace. Take a look at the periods of that stock some day. The earnings have gone down, the dividends have gone down, the price has gone down over a period of many years. And I frankly cannot understand why anybody would ever buy a stock like that. And there are numerous other stocks of that kind.

Now, maybe these people were seeing something that I don't see. But it is surprising how many stocks have poor records and still manage to have stockholders.

Q. It is obviously people like that, people who buy into

companies of that kind, are not buying for the purpose of earning what that stock would show it is earning at that particular time but are expecting something better in the future; is that not true? A. To tell you the truth, I don't know why they buy stock like that. It's a mystery to me.

Presiding Examiner: Well, Dr. Shaffner, you may feel their judgment was bad, but is it not axiomatic that they are buying it because, rightly or wrongly, they expect something better in the future? They are not buying it because there are relatives in the company, are they?

The Witness: I don't know. I sometimes think there must be some irrational reason, because it is hard to find a rational reason for the purchases of some of these stocks you see.

By Mr. Littman:

Q. Let me be a little more specific. Let's take one of these companies you mentioned. I do not know what their earnings-price ratios may be, but I gather from what you say that it is something close to zero. A. Well, if the trend continues, it will be there.

Q. Let's say it was either at or very close to zero. Now, a person buying that stock today certainly is not buying it with the expectation that it is going to stay at zero from here on into the future; is that true? A. I suppose so. But as I say, there are a good many

stocks with respect to which the motives of the investors are pretty much of a mystery to me. I would rather not try to untangle it.

Presiding Examiner: Could we button it up this way; that, although there may be some situations, Dr. Shaffner, where, for the life of you, you cannot understand how the investor arrived at his decision to buy those stocks; that, outside of that, that, generally speaking, it is correct, as suggested by Mr. Littman, that investors buy stocks because of their hope or expectation of growth either in the area of dividends or earnings or market prices?

The Witness: I think that would be a normal thing, yes.

By Mr. Littman:

Q. Now, in addition to the capital gain of an average of 37 per cent a year, 1952 to 1959, in the case of the common stocks, the six natural gas company common stocks reflected in your Exhibit 20, in order to find the true

financial facts concerning those stocks, dividends should also be taken into consideration, should they not? A. Well, certainly dividends are a part of the relevant financial picture, yes.

Q. Now, you have testified that there were six natural gas pipeline companies included in the natural gas pipeline index of Standard & Poor's reflected in Exhibit 20; namely, El Paso Natural Gas Company, Mississippi River Fuel, Northern

Natural Gas Company, Panhandle Eastern Pipeline Company, Southern Natural Gas, and United Gas Corporation; is that right?

Presiding Examiner: Where is that testimony, Mr. Littman, in the prepared testimony?

Mr. Littman: Page 9.

Mr. Werner: Second answer.

Presiding Examiner: All right.

Mr. Littman: The second answer of page 9 of the prepared testimony.

Presiding Examiner: All right.

A. Yes, those are the companies included by Standard & Poor's in their index.

By Mr. Littman:

Q. Now, in order to save time, I will ask you to turn to Exhibit 21, and let me summarize certain data shown there without wasting time and asking you a separate question on each one.

Turn first, if you please, to sheet 24, page 24, of that exhibit, which shows certain data for El Paso Natural Gas Company. Now, the dividend on El Paso stock in the first year shown, which is 1945, was 40 cents a share. Now, the dividend in 1959, which is the last one shown on that sheet, was $1.30 per share. Do you find that? A. Yes, sir.

1039

Q. Now, the earnings in 1945 per share was 58 cents. The earnings in 1958—these are shown in the column (c)—were $1.61. A. Yes, sir.

1040

Q. Now, turn to the next company, Mississippi River Fuel Corporation, which is shown on page 25. The dividend per share in 1950, which is the first year shown on the tabulation on that page, was 91 cents a share, and in 1959 it was $1.60 per share. The earnings for that company in 1950 were $1.50 per share, and in 1958, they were $1.96 per share. Have you followed me so far? A. Yes, sir.

Q. Now, turn to Northern Natural, that is shown on page 26 of Exhibit 21. You show dividends—a dividend of 63 cents a share in 1945, the first year shown, and that dividend grew to $1.40 a share in 1949—1959, I am sorry. The earnings were, in 1945, $1 per share, and in 1958, $1.62 per share. Are those figures correct? A. Yes, sir.

Q. Now, for Panhandle Eastern Pipeline Company, your data shown in Exhibit 21 appear on page 27. The dividends in the first year shown, which was 1945, are 50 cents a share, in 1949—I am sorry—1959, $1.80 per share, the earnings were $1.07 per share in 1945, and $2.78 per share—$2.74 in 1958, the last year shown. Is that correct? A. Yes, sir.

Q. With respect to Southern Natural, shown on page 28; Southern Natural paid dividends of 63 cents a share back in 1945, as compared with $2 a share in 1959, the last year shown,

1041

and it had earnings of $1.22 per share in 1945, and $2.40 in 1958, is that correct? A. Yes, sir.

Q. You do not show any such statistics for United Gas Corporation in your Exhibit 21? A. No.

Q. Now, Dr. Shaffner, the dividend statistics which we have just used with respect to the natural gas pipeline companies included in Standard and Poors Index show clearly that from the viewpoint of dividends and earnings, those pipeline companies would be clearly classified as growth companies, is that correct? A. I think they have shown excellent growth characteristics and I have so characterized them in my testimony.

Q. Would you agree that the greater the growth prospects the higher the earnings multiplier in arriving at the value of the stock? A. No.

Q. Why not? It seems to me quite axiomatic that that would be the case. I am now speaking of the price earnings ratio, wherein you determine price by a multiplier times the earnings, to arrive at the price of the stock. A. All right. Well, you take a look at McDonnell Aircraft sometime, and see what its growth in earnings has been, and what its price earnings ratio is. It has had a phenomenal growth in

earnings. Its price earnings ratio is between 5 and 6. This is true of many of the aircraft companies. It is true of Boeing, Douglas, General Dynamics. Practically all of the aircraft companies have had phenomenal growth—much more, I would say, than the pipelines. Their price earnings multiple is very, very low on the average.

Q. Well, confining the question to natural gas pipeline stock, isn't it true that the greater the growth prospects the higher the earnings multiplier in arriving at the value of the stock? A. That might be, Mr. Littman. It would be necessary to make a study to show it. But it could be the case.

Presiding Examiner: Read the question and the answer back.

(The question and answer, as recorded, were read by the reporter.)

Presiding Examiner: Dr. Shaffner, are you saying that you have not made such a study with respect to the natural gas pipeline companies? A. Well, I have not made a detailed study with respect to that particular point.

Presiding Examiner: Well, a moment ago you gave us some statement about the McDonnell Aircraft, and about aircraft companies in general. Have you made a study of the aircraft companies?

1043

The Witness: Yes, I have. As a matter of fact, there are certain growth industries which seem to be characterized by quite high price earnings multiples. Others appear to be characterized by low.

Presiding Examiner: Well, the only reason I am asking the questions—is there some reason why you have made such a study with respect to aircraft companies, but not about natural gas pipeline companies?

The Witness: Well, I have a study available in my office which includes aircraft companies, but does not include natural gas pipelines, which is on this particular point.

By Mr. Littman:

Q. Well, you don't have to go very far to determine what has happened to the natural gas stocks. Just look at your own Exhibit 21, and cast your eye, for instance, in the case of El Paso, down columns C and D, which are earnings and dividends respectively, for the years 1945, for each year right down to 1958, and compare that column with the

market price which you show in Column II. that is the average market price, and you will see that the price of the stock rose in every instance right along with the growth of the earnings and dividends through the years. And that is true of all the others in your exhibit, isn't that true? A. Yes. But, Mr. Littman, I would like to call your attention to a somewhat broader fact, and that is that we have

been in a bull market for several years, and one of the characteristics of this bull market has been that earnings generally have been priced at a higher multiple than was previously the case—more than double what they were priced at in 1948. And this has been true of companies whose earnings have been increasing, and it has been true of companies whose earnings have not been increasing. So in a sense this is more a phenomenon of the bull market, I would say, than of the characteristics of a particular industry, although the particular industry might also have some of these characteristics, had we not been in a bull market.

Q. When did that bull market start? A. Two dates have been given for it. Some date it back from 1941-42, really, about July of '42, shortly after we got into the Second World War. There was, however, a topping out of the market in '46, and the market remained in a plateau, a broad plateau area, between 1946 and '49. In '49, it started either a second bull market, or resumed the original bull market, so you can use either '49 or '42 as the date for the beginning of the bull market.

Q. Well, is it your testimony, Dr. Shaffner, that these increases that you have described in your exhibit in the natural gas pipeline market, stock market prices, are not related to the growth in earnings and dividends through the same year, but are simply the result of a bull market? Is

that your testimony? A. Probably both factors are true. However, I would call your attention to the fact that the price as a multiple of earnings has increased for stocks whose earnings have not been increasing as well as for those whose earnings have been increasing. And, to that extent, it is obvious that the bull market is responsible.

Q. In other words, what you are saying, and I am sure you don't want to be understood as saying the increase in the price of natural gas stock is wholly and solely due to some bull market, but it is due in part to the bull market and in part to the excellent record of earnings and dividends, is that right? A. I think that would be substantially correct.

Q. Are you in a position or not to tell us approximately how much can be be atributable to one or to the other? A. This is the kind of thing where it is very difficult to assign relative weights. I would, however, call your attention to the fact that page 39 in Exhibit 21 shows earnings price ratios as having reached a peak in 1942, approximately the middle of the year, and as having started a broad decline from then to the present time.

Q. What page are you referring to? A. Page 39, the last page in the big exhibit.

Q. Well, of course, as the price of the stock goes up,

the earnings price ratios go down. Isn't that true? A. Well, the earnings price ratio is the resultant of two factors, and if the earnings stayed the same and the price rose, then the earnings price ratio would fall. The price, in effect, Mr. Littman, has risen faster than the earnings have.

Q. Now, if the growth in the natural gas stocks were to cease or be slowed down, there would be a different

appraisal of the stocks by investors than has heretofore been the case, is that true? A. I don't think the appraisal would differ too markedly, because natural gas stocks are considered by many people to be part of the utility industry, and the utility industry is generally considered to be not one of the faster growing industries. Actually, there are individual cases which provide outstanding exceptions to this idea. But the idea prevails that utility securities generally, including pipeline stocks, are income securities. It just happens that the natural gas industry has enjoyed phenomenal growth in addition, and has conferred a bonus, so to speak, on the investors who are so fortunate as to hold these stocks over a period of years.

Mr. Littman: May I have the answer read back?

(The answer, as recorded, was read by the reporter.)

1047

By Mr. Littman:

Q. You have used, in your Exhibit 20, as the base period, the average prices for the years—the average prices of the stocks reflected there, for the years 1941 to 1943, inclusive, for all years, have you? A. That is Standard and Poors base period, and I simply adopted it, because 10 was the figure used for that period, and it made a very simple basis for comparison for later years.

Q. You state on page 10 of your prepared testimony that compared with the 1941-1943 base period index of 10 the railroad stock price index had risen 251 percent by the year 1959, as compared with 233 percent for the electric utilities, is that right? A. Yes, sir.

Q. In other words, according to your chart, the railroads outstripped the electric utilities in the rise in the market value of their respective common stocks since 1941-43 base period? That shows, I think, pretty clearly— A. That is right. It shows on the chart.

(1047)

Q. Now, would it be proper, Dr. Shaffner, to conclude from these data, that the railroads have prospered more than the electric utilities during that period? A. You must remember that railroad securities are highly leveraged securities. They are so highly leveraged indeed

1048

that there have been periods in the country's history when over a third of the railroad mileage of the country was in bankruptcy, because they had so much leverage. This means that in times of prosperous business, the railroads will show a very rapid expansion of their earnings. In other words, being highly leveraged, the railroads tend to reflect prosperity to a greater percentage degree than do leveraged industries.

Q. Dr. Shaffner, I think you may have been answering a question you thought I was going to ask you two or three questions later rather than the one I just asked. My question at this point is simply this. Does the fact that the railroad's stock price index rose 251 percent by the year 1959, as compared with 233 percent for the electric utilities—does that fact standing alone—is it proper to conclude, from just that fact standing alone, that the railroads have prospered more than the electric utilities during that period? A. Well, I would not take any fact standing alone and draw any conclusions from it. But I suspect that they did relatively well during this period, because of the increase in the business handled by the railroads.

Q. You think they did better than the electric utilities during that period? A. Well, the prices did better.

Q. The prices did better. Now, my question, of course,

1049

is whether or not the fact that the prices did better is a true index to the prosperity of the particular industry.

That is my question. A. Over a long period of time, I would say it would have to be. But you could have exceptions, and I think you would have to make a study of the situation to determine it. It is well known that the railroads generally have not been particularly prosperous as an industry, and there have been some drastic steps taken recently to try to do something to help them.

Q. Would you consider the period from 1943 to 1959 a "long period of time", as you used it in your answer? A. It is an intermediate period. It is somewhere between a short and a long period, I would say.

Q. You mentioned in one of your earlier answers that there was great leverage in the railroads. Can you tell us what the average equity capitalization is for railroads—approximately, in percent? A. No, I don't have it. But I do know that the railroads in general have had more debt than they could carry over the years, which has been shown by the frequent emergence of bankruptcies in the railroad. The Missouri Pacific is the last big railroad to come out of bankruptcy, which it did in 1956, after having been in bankruptcy for 21 years. And many railroads have been in bankruptcy, like the Erie, for example, more years than they have been out of it.

1050

Presiding Examiner: Dr. Shaffner, will you explain for the record the term "leverage"?

The Witness: Yes. Leverage simply means the results in terms of income, and also often of price on the common equity of raising money by means of senior capital that comes ahead of the common, and which takes—which represents a lower cost than the enterprise as a whole will earn. Therefore, the common stockholders get the benefit of the difference between what has to be paid on the capital supplied by the senior security holders, who

include the bond holders, and, for economic purposes, the preferred stockholders, and what the enterprise as a whole earns. And, therefore, the more money that can be raised at rates below that which the enterprise as a whole earns, the larger is the resulting multiplication of the effect of a given change of earnings on the stockholders.

By Mr. Littman:

Q. Dr. Shaffner, what would you consider to be a high leverage company, in terms of percentages of capitalization, equity capital? 10 percent, 15? A. I think some of the pipelines are fairly high leverage companies.

Q. Let's have a percentage, so we will know what you are talking about when you talk about high leverage. Just give us a range so that we may understand what you mean.

1051

A. Well, any senior securities constitute leverage. But high leverage, I would say, would start at about 60, 65 percent, and that on up.

Q. 60 or 65 percent of debt versus 30 or 45 percent of equity out of total capital? A. Yes, sir.

Q. Anything more that you could consider high leverage? A. Well, I frankly wouldn't want to draw a hard and fast line. It depends on the industry. In the copper mining industry, I would think 30 or 40 percent debt would be fairly high leverage.

Q. And in railroads, what would you consider to be? A. Well, the leverage that they have is more than they should have as an industry. Actually, the railroads are highly cyclical, and it is a rather astonishing fact that they got built with so much debt in the first instance. Having been built with this debt, which is long term debt, they have had to live with it. But they are not, to my mind, the kind of industry that should have very much debt at all.

Q. Well, what is your idea of a high leverage on a railroad? A. Well, I would think 40 to 50 percent would be high, and most of them have a god deal more than that. But some of them, like the Atchison, Topeka and Santa Fe, have gotten their debt down to about 17 percent, and as a result are in

1052

pretty good shape.

Q. That is percentages you are giving are equity percentages, is that right? A. No, debt percentages.

Q. Would it surprise you to know that the average railroad in this country has 58 percent equity in its capitalization? A. How do you compute that average?

Q. What? A. How do you compute that average?

Q. Well, what is the average? Do you know? A. What I mean is—

Q. The average of the railroads in this country. A. Are you taking a composite of all the railroads weighted by their capitalization, or is each railroad counted as one? Are you making an arithmetical average of each railroad?

Q. It is a weighted average of Class I railroads in these United States. A. Well, that is a little higher than I thought it was. But I still think they have too much debt. And, as I said, I thought 40 percent debt would be high, and that would give them approximately that figure.

Q. You would consider a company with a 58 percent equity as having a high leverage?

1053

A. If it was a railroad, yes.

• • • • • • • • • • •

Q. Dr. Shaffner, maybe we can button up the railroad end of this thing here now and get back to the natural gas business.

I think you mentioned already that approximately one-third of all the railroad trackage in the United States was in receivership during the late stages of the depression. A. There was a period in its history when over one-third of the railroad mileage of the country was in bankruptcy. I don't remember what the exact period was.

Q. And many of them are still in receivership, are they not? A. No, sir.

Q. Are all of them out now? A. There may be one or two little ones. But, as I mentioned, the last big receivership was the Missouri Pacific, which was in receivership 21 years, and came out in 1956.

1054

Q. All right. And you, of course, know that railroad stocks were selling way off back in the 1941 and 1943 period? A. Oh, yes, they started from a very low point.

Q. And, in fact, they didn't have anywhere to go except up, starting with your base period, isn't that right? A. Yes.

Q. Now, it is a fact, isn't it, that there is not a railroad stock in the United States today, or at least there was not one last fall, which sold as high as book value, isn't that true? A. Typically,—

Q. I am talking about long haul railroads. A. Typically they sell at a small fraction of book value. New York Central is selling at about 20, and it has a value of about $1.95 a share.

Q. And none of them can issue any bonds under their present financial circumstances, and none of them can sell—I am sorry—none of them can issue any common stock, could sell any common stock today in their present circumstances, can they? A. Well, the railroads are not an expanding industry, and there is no particular need for capital as far as they are concerned, except as they purchase

additional equipment, and they finance that with equipment trust certificates. That is the main type of new securities being issued by the railroad.

1055

Q. That is because they cannot finance in the normal manner, isn't that right? A. Well, I don't think they have very much in the way of financing needs. They are shrinking rather than growing. Many of them are abandoning their lines.

Q. Why did the Federal Government start in 1958 to guarantee loans made by railroads, if they could go out and float bonds and sell stocks? A. Well, this was a part of a program to help them generally, and included 8 or 9 points which were designed to give them general assistance. There is no doubt that the railroads have been in trouble, and various measures have been suggested for helping them. It may interest you to know that I, serving as the program chairman of the Washington Society of Investment Analysts, on last Tuesday evening, introduced to a group of about 50 analysts here in Washington Mr. Pierre Brete, a partner of Hayden Stone and Company, considered the country's top railroad analyst, who wrote the reorganization plan for the Missouri Pacific, and he covered the railroad situation from A to Z last Tueseday evening, and I was sitting on his immediate left while he did it. So there is no doubt—he went into some detail about various measures that are being taken in Philadelphia and in New Jersey, and in New York, through remission of taxes, and in other ways, to help the railroads.

1056

Q. Well, now,—

Presiding Examiner: It does seem to be a slightly irrelevant area.

Mr. Littman: I want to give the witness every opportunity to make all explanations he desires.

By Mr. Littman:

Q. Well, Dr. Shaffner, I gather from what you have said here in the last few minutes the railroads certainly have not prospered since your base period of 1941-1943, and yet, as your index—your Exhibit 20 shows, prices of railroad stocks rose 251 percent from that base period to 1959, electric utilities rose only 233 percent in market price. Certainly we can agree that that increase in price was no indication that the railroads did better than the electric utilities, is it? A. By itself it would not necessarily establish how they did.

Q. Well, what does it indicate, if anything? A. It indicates only what it indicates. It shows that the prices went up by this amount.

Q. Now, you make a showing for natural gas stocks, showing they went up by some 600 and some odd percent. What does that indicate, if anything? A. It shows that it went up by the percentages indicated.

1057

Q. What conclusions, if any, are you asking the Commission to draw from that fact, if any? A. I think it shows that investors who invested in the natural gas pipeline industry during this period, and held their stocks, and sold out at the average 1959 price, did better than they would have in any of these other industries on the chart. That is what my testimony states.

Q. That is the only conclusion you would draw from those data? A. Well, that is the only conclusion I did draw.

Q. Well, let's look for a moment at the industrials shown in Exhibit 20, both in chart and tabular form.

You are, I am sure, familiar with the fact that the excess profit tax during World War II held their earnings down,

didn't it, and the OPA, and other regulation? A. Yes, but those were both eliminated after the war.

Q. But, during the war, at least, their earnings were held down by these controls, were they not, that I mentioned—namely, the excess profits tax, and the OPA regulation? That is a fact, isn't it? A. Yes. It would certainly be a negative influence, you might say.

Q. Now, during that same period, while the excess profits tax did apply technically to natural gas companies, it didn't affect them very much, did it, because of the fact

that excess profits taxes were based on either capital investment—I am sorry—invested capital or the average of earnings in a four year base period, isn't that true? A. That is right.

Q. So it is true that the natural gas industry was not nearly as hard hit by the excess profits tax during World War II as industrials, isn't that a fact? A. I made no particular study of it. If you will state it is a fact, I will not dispute you.

Q. All right.

Now, looking at your statistics on the second page of Exhibit 20, on spot prices, I note that the index for natural gas pipelines increased—well, before I get into that, just let me hold that question for a moment. Isn't it a fact that the pipeline industry as we know it was just about getting its start in 1941 and the 1943 period, your base period. Isn't that right? A. Well, I have generally considered that the real growth of the pipeline industry started after the war. It may have come a little bit sooner. But it was approximately—it was during the '40's.

Q. In other words, starting with your base period, it had a lot of room, didn't it, to go up and expand? A. Yes, it did. And it did expand.

Q. And you are familiar with the fact that Section 7 of

the Natural Gas Act, which, of course, covers the issuance of certificates to natural gas companies, was enacted in February of 1942. You are familiar with that fact, are you not? A. I didn't know the month, but if you state it is a fact I will accept it.

Q. And, of course, there were great demands for natural gas during World War II, and from that time on, the industry, natural gas industry, began to boom, didn't it? A. Yes, especially after the war.

Q. Of course one of the things, I might say, that held down some of the boom during the war was the inability of the industry to get pipe. A. To get materials, yes.

Q. Now, looking at your statistics on the second page of Exhibit 20, on stock prices, I note that the index for natural gas pipelines increased from 13.6—I am sorry—13.16, in 1943, to 23.51 in 1947. You see that? A. Yes, sir.

Q. That is in the first column? A. Yes.

Q. Now, this was a very substantial increase, of course. The 425 industrials, shown in the second column, increased from 11.49 to 14.85 during the same period, 1943 to 1947, is

that right? A. Yes, sir.

Q. The natural gas distributors increased from 11.91 to 20.37 during the same period. And that increase is pretty close to that experienced by the pipelines, isn't that right? A. Yes, sir.

Q. Railroads increased from 11.81 to 14.02, electric utilities—from 11.13 to 14.27, telephone and telegraph, 10.57 to 11.21, during the same period. You see those figures? A. Yes, sir.

Q. Now, these figures show conclusively, do they not, that only the gas industries—that is the pipelines and the distributors, had any substantial increases during the period

from 1943 to 1947? A. They had the greatest increases. But they all showed increases.

Q. Well, the figures, of course, speak for themselves. A. Certainly.

Q. But you don't doubt that the natural gas pipelines and distributors have the greatest increase of the several shown? A. No, the figures show that.

Q. Isn't it a fact that the six natural gas pipeline companies included in your studies were relatively small in 1941? In that regard, Dr. Shaffner, I refer to your Exhibit 21, and your testimony at page 19 of your prepared

testimony, where you say that 10 of the natural gas pipeline companies included in Exhibit 21 in 1945 had total capital of only $295 million. Do you recall that? A. Yes, sir.

Q. That is pretty small, compared to the capital of today, is it not? A. It is indeed.

Q. By the way, do you happen to have at your fingertips the comparable figure as of today, to compare with the $290 million? If you don't, we will skip it. But I thought you might have it handy. It is well into the billions, isn't it? A. It is in the testimony.

Q. I beg your pardon? A. It is in the testimony.

Q. Is it? Where? A. Page 19.

Q. Yes, you are right. $5 million—you say that the growth of the investment 10 pipelines is $295,571,000 in 1945, to $5,010,008,000 in 1958, an increase of 1595 percent. A. That is right.

Q. Looking again at page 2 of your Exhibit 20, if you make a 10 year comparison, over the last 10 years, from 1948 to 1959, we get the following increases in 1959 over 1948. I will ask you to accept our arithmetic, subject to check,

1062

Doctor, in order to save time. Just pure arithmetic here. The natural gas companies, speaking about the increase in 1959 over that which obtained in 1948. Natural gas pipelines increased 2.62 times. Industrials 4 times. Natural gas distributors, 2.47 times. Railroads, 2.29 times. Electric utilities, 2.56 times. And the telephone and telegraph combined, as you combined them in your study, 1.75 times.

Now, my question, accepting those figures, for the moment— A. You are dividing the 1959 index by 1948 index, is that right?

Q. Yes, now, these figures show, do they not, that the stocks of the natural gas pipelines, and the electric utilities, had similar increases during that 10 year period, the figures being 2.62 times for natural gas pipelines, and 2.65 for the electric utilities? The growth has been—in price, has been about the same, hasn't it? A. Yes, sir.

Q. Now, let's look at one further comparison, and that is comparing your 1953 index, shown in Exhibit 20, with the 1959 index, and you get the following figures on the same basis.

The natural gas pipelines increased 1.51 times—that is in 1959 they had increased 1.5 times over 1953 in price of their common stock. Industrials, 4 times. Natural gas

1063

distributors, 1.79 times. The railroads— A. Just a minute. Industrials you had 4 before. Have you got the same figure?

Q. I beg your pardon. I stand corrected. 2.47. I am sorry. I am glad you corrected that. I guess I picked it up from the previous comparison. 2.47 times for industrials. For natural gas distributors, increased 1.79 times. For railroads, the increase was 1.55 times. For

electric utilities, the increase was 1.83 times. And for telephone and telegraph combined, the increase was 1.64 times.

I ask you to accept my arithmetic, subject to check. A. All right.

Q. Now, you can see from these figures that over that period, 1953 to 1959, common stocks of natural gas companies—well, let's put it this way. The common stocks of industrials had the greatest increase, as I think you said you would normally expect, right? A. Yes, sir.

Q. And you will note from the figures I just gave you that the natural gas pipelines experienced the smallest growth during the period 1953 to 1959 in the value, the increase of value of their common stock, is that true? A. That is right.

Q. The smallest of this group? A. That is right.

1064

Q. As a matter of fact, we—and when I say "we" I mean the natural gas pipelines, did worse than the railroads, isn't that a fact, during this pas six years? A. Yes, sir.

Q. The natural gas pipelines increased 1.51 times, and the railroads 1.55 times, is that right? A. Yes, sir.

Q. Now, isn't it a fact, Dr. Shaffner, that if you would compare any year after 1950 with the year 1959, you would find that the increase in the price of the natural gas pipeline stocks was progressively less in each year than the increase in the price of the other groups of stocks? A. I have not made that comparison.

Q. We have, and find that to be so. We will be glad to show you our worksheet on it. Would it surprise you if that were the fact? A. If you say it is a fact, I will accept it.

Q. Now, let's turn for a few moments to Exhibit 21. Pardon me just a minute. A. Did you include all of these other groups in that comparison?

Q. Yes. A. Including telephone and telegraph?

Q. Yes, sir. There is not a single year that we didn't do worse than the railroads, the telephones and telegraph

1065

combined, as you have combined them, the industries, the 45 industrials, or the electric industry, or the natural gas distributors. That, of course, could be worked out directly from your own exhibit 20.

Doctor, will you please next turn your attention to Exhibit 21.

On page 14 of your testimony, you state that of the 40 bonds currently employed—this is just above the center of the page, where you are talking about this—I am paraphrasing it in order to save time.

You testified there that of the 40 bonds currently employed in Moody's public utility bond averages, and listed on page 8 of your Exhibit 21, there are only two natural gas bonds, and that both of these are rated BAA. Is that correct? A. Yes, sir.

Q. Now, what significance do you attach to the fact that only two natural gas bonds are included in Moody's averages, and these are in the lowest averages which Moody considers to be of investment quality? A. Well, I think you would have to ask Moody's for that. I am surprised myself that they include so few natural gas pipeline bonds in their utility bond averages.

Q. Are any natural gas pipeline bonds rated higher than A?

1066

A. Not pipeline bonds, as far as I know.

Q. Well, I am sure you cannot read Moody's mind, or whoever Moody's is, who rates these stocks in Moody's, but I am sure you will agree that Moody's, in view of what we have just stated here, considers the bonds of pipe-

line companies, natural gas pipeline companies, to be generally below the average of other utilities, particularly electric utilities, and also below those of industrials—they consider them to be of a lower caliber, is that right? A. That is certainly true as far as their averages are concerned.

Q. Now, I note from pages 12 to 15 of your Exhibit 21 that no natural gas company shown on those pages has bonds or debentures that are rated higher than A. I am glancing down Column E of those pages. Is that correct? A. That is correct.

Q. Dr. Shaffner, on page 15 of your prepared testimony, you state that it would appear from the chart on page 11 of Exhibit 21, and tables on pages 12 and 13, that where pipeline companies issue mortgage bonds their capital costs will be higher than the BAA level, although many of their offerings are rated A. Do your recall that? A. Yes, sir.

Q. That is, of course, a correct observation. We find it to be true, too. Now, what significance do you attach to that fact, Doctor?

A. To some extent I would imagine it is a reflection of the demand and supply situation, which have a great deal to do with interest rates. There are a great many pipeline bonds on the market. Piplines have done a great deal of financing by means of bonds.

Q. In other words, natural gas pipelines are in competition constantly with other forms of industry in the search for funds? A. Yes, as we learned yesterday.

Q. Now, isn't it fair to say, then, that while the bonds of the natural gas pipeline companies are rated by Moody's as A, the market appraises them as being low Grade BAA bonds. Isn't that another way of stating the same fact as you have stated? A. Well, I wouldn't want to go any fur-

ther than what I have said. But Moody's rates the bonds, and the yields show what the bond costs are.

Q. Well, just look at your chart on page 11. I think that that shows—the fact shows up very graphically there. The top line in this graph are Moody's BAA rated public utility bonds, and the lower line are the Moody's rated A rated public utility bonds. Now, let's take Tennessee's bonds. Those bonds—there are 17 issues of those bonds shown on page 11 of your Exhibit 21, and you identify them by numbers on the chart. I think they correspond with the line numbers in the

1068

tabulation, is that right, for easy reference? A. That is right.

Q. Those Tennessee bonds are—well, they are shown there. I don't need to list all of them. But I want to ask you this question: All of those that were issued by number in your index since September 1952 are numbered higher than 15—that is issues Nos. 17, 18, 21, 27, 29, 30, 34, 40, and 47.

Now, those are all of the bond issues that were issued by Tennessee subsequent to September 1952, is that right? A. Yes, sir.

1069

Q. Now, I put a little check mark opposite each of those numbers on your graph, on page 11 of your Exhibit 21, so as to follow it.

Now, first let me ask you. Each of the bonds I just mentioned issued by Tennessee since 1952 had an A rating were rated "A" by Moodie's? A. I believe they were.

Q. I am sure you are right.

Now, isn't it also a fact that, as shown by your chart on page 11, Exhibit 21, each of those bonds sold at a yield higher than Moodie's averages for BAA bonds. They all

appear in circles of the chart on page 11 above the line, above the second line. And in some instances quite high above the second line. Is that right? A. Number 27 is practically on the line, but the others are above it.

Q. Yes. But look at 17, 18, 21, 29, 30, 34, 40, 47,—they are all well above the line, are they not? A. Yes, sir.

Q. All right. By the way, you show in the legend on page 11 a triangle called "Double A Rated Pipeline Bonds." You don't find any of those on the chart. Why is that? A. I assume it is because there was a double A at one time, and it was removed, but the legend was not.

Q. In other words, whoever prepared the chart thought

there must be such an animal, but he couldn't find it, and he forgot to delete it from the legend, is that right? A. It is probably a carry-over from an earlier exhibit.

Q. Do you know of any time—was there any time in the history of the natural gas pipeline business when there were any double A rated bonds? A. I don't know. There are gas company bonds that are highly rated. But not pipe line bonds.

Q. Let us turn our attention for just a minute, please—I think we can cover this next subject in the next five minutes, before the lunch hour—to the matter of preferred stock. You show on pages 16 and 17 of your Exhibit 21—you show issues of preferred stock by natural gas pipeline companies. And in your testimony, at page 16, you call particular attention to the fact that ten of the issues were those of the Tennessee Gas Transmission Company. Do you recall that? A. Yes, sir.

Q. Did you compare the yields at the time of offering of each of the issues of Tennessee with the yields on Moodie's high-grade or medium-grade public utility preferred stock—because those terms are terms used in Moodie's—that is the reason I quote them. A. No, I have made no special study of this.

Mr. Littman: In order to save time, Mr. Examiner, we have had an exhibit prepared. We don't want to clutter up this record with a lot of figures. This may be helpful in facilitating and expediting cross-examination.

I ask there be marked with the next exhibit number, 27, a single page tabulation bearing the caption "Tennessee Gas Transmission Company, Yields on Preferred Stock Issues of Tennessee Gas Transmission Company."

I ask that be marked for identification as Exhibit No. 27.

Presiding Examiner: There is identified as Exhibit No. 27 a one-page tabulation bearing the heading at the top, "Yields on Preferred Stock Issues by Tennessee Gas Transmission Company."

(The document referred to was marked for identification as Exhibit No. 27.)

Mr. Littman: I will ask, Mr. Examiner, we fill in the blank opposite the word "Exhibit" in the caption of the first column. That blank should be "21."

By Mr. Littman:

Q. Doctor, you will, I am sure, recognize that the figures appearing in the first four columns are taken directly from your pages 16 and 17 of your Exhibit 21. The figures appearing in the next to the last column on the right side is called "Yield on Moodie's Medium Grade Preferred Stock."

I am going to ask you to accept those figures for the time being, subject to check. They were taken from Moodie's. And of course the figures under the caption on the right, "Excess over Moodie's Yield," is simply the difference between the previous two columns? A. Yes, sir.

Q. I am simply—I have simply prepared this in order to avoid reading into the record a lot of figures.

Mr. Spalter: Can you give us a better reference for that next to the last column than just Moodie's?

Mr. Littman: It is known, I am informed, as Moodie's Manual—that is Moodie's Public Utilities Manual.

Mr. Examiner, perhaps this might be a good time to recess. The witness may want to check some of these figures and refresh his recollection of others.

Presiding Examiner: We will recess to two o'clock.

(Whereupon, at 12:30 o'clock p.m., the hearing was recessed, to reconvene at 2:00 o'clock on the same day.)

AFTERNOON SESSION, 2 P.M.

Presiding Examiner: All right, gentlemen.

The hearing will come to order, please. Whereupon,

Felix I. Shaffner

resumed the stand, and testified further as follows:

Cross-examination—Resumed

By Mr. Littman:

Q. Dr. Shaffner, did you have an opportunity over the noon recess to check the figures in Exhibit No. 27 for identification? A. Yes, I did.

Q. Did you find them correctly setting forth what they purport to show? A. Yes, that is correct.

Q. Doctor, Exhibit 27 shows, does it not, that the yields on Tennessee's preferred stocks at the time of issue, as set forth in this exhibit, have been in each case higher than the yields on Moody's medium grade preferreds with the difference becoming rather substantial in the last five issues, isn't that correct? A. Yes, sir.

Q. Is it not a fact that the preferred stock issues of

Tennessee, which we have been discussing, and which are set forth in Exhibit 27, are first preferreds, and they contain

1074

sinking fund provisions, and the stocks are to be redeemed at dates certain? A. As far as I know, they are.

Q. In other words, none of them are convertible? A. That is right.

Q. The retirement provisions as to the preferred stocks, as well as the sinking fund provisions, distinguish natural gas pipeline company preferred stocks, generally speaking, from electric utility preferred stocks, isn't that right? A. Yes, sir.

Q. I note that you did not include in your table, on pages 16 and 17 of Exhibit 21, any of the issues of Tennessee's second preferred stock, is that right? A. That is right.

Q. The second preferred stock of Tennessee is convertible into common stock, is that correct? A. Yes, sir.

Q. And there are no sinking fund provisions in connection with the second preferred stock of Tennessee, is that right? A. That is right.

Q. Will you please accept, subject to verification, that in April of 1959, Tennessee issued $44 million of second preferred stock, 4.72 percent series, with a yield of 4.72 percent, and that at the time the yield on Moody's medium grade public utility preferred stocks was 4.86 percent. I will

1075

ask you to accept those figures subject to verification. A. Yes, sir.

Q. Now, assuming the correctness of those figures, how do you explain the fact that according to your studies, natural gas pipeline preferred stocks issued in 1959 had

yields of 5.35 percent, 5.60 percent, as shown in your Exhibit 21, at page 17, Column G while Moody's medium grade public utility preferred stocks had a yield of 4.86 percent in April 1959, which later figure I have asked you to accept subject to check, but that Tennessee was able to issue $44 million of second preferred stock in April of 1959 at a yield of only 4.72? What is your explanation for that? A. That was a convertible preferred stock, was it not?

Q. Yes, sir. A. That is the answer.

Q. In other words, it was the convertible nature of the second preferred stock that enabled Tennessee to sell it at a yield lower than Moody's medium grade public utility preferred stocks had at that time, and lower than the yields paid by other companies for their straight preferred stock, is that right? A. Yes, sir.

Q. Now, this converse feature, I am sure you will agree, Dr. Shaffner, is an important and valuable feature of the second preferred issues of Tennessee, so much so that investors

1076

are willing to pay a much higher price for the stock with such provisions than for preferred stocks without such provisions? A. That is presumably why the conversion feature is added to the stock.

Q. Isn't it true, Dr. Shaffner, that the reason for issuing convertible preferred stock is to increase the equity of the company in an economical manner? A. Yes. The original issue is put out at a lower yield cost than would otherwise be the case, and frequently the conversion price is made above the then prevailing price for the common, so it amounts to a deferred sale of the common at a price above the market.

Q. You heard Mr. Symonds' testimony to the effect that the whole purpose of issuing the convertible preferred was

to thicken the equity in the most economic manner possible. I take it you have no disagreement with that proposition, do you? A. No, sir.

Q. Now, Dr. Shaffner, on page 17 of your prepared testimony, and now we go to the subject of common stock—we leave the preferred stock—page 17 of your prepared testimony, you refer to the fact that Tennessee issued 1,600,000 shares of common stock on February 16, 1960 and that the issue was quickly absorbed. You then state, and I quote you in part, "Data such as this indicates to me that

equity capital is available in substantial quantity for pipeline companies with an established record such as Tennessee."

Now, what do you mean by the words "established record" as you used it in that testimony? A. Well, Tennessee has a history and a record which is subject to the appraisal of investors. And according to the value line investment survey, its stock is rated the highest of any pipeline stock in investment quality. And thus its established record, as reflected in the statistics of its operation, and in its rating, provides the basis for investor evaluation of new issues of common stock.

Q. Well, just to shorten this, did you mean by the words "established record" the dividend record of Tennessee, the increase in market value of the stock, and the growth factor, all based upon earnings of common stock of Tennessee in the past, which I think Mr. Symonds referred to in his testimony? A. I meant all the factors that an investor would normally consider as being pertinent to an evaluation of the company, including those that you mentioned.

Q. Including those which I have mentioned? A. Yes.

Q. I would also like to point out that—see if we can agree—that the record, the financial record of

1078

Tennessee—that is the history in the past several years of its dividends and its earnings, and so forth, all reflect many millions of dollars collected under rate increases subject to possible refunds. Isn't that true? A. That is right.

Q. In other words, the reported earnings reflect all the moneys collected under the rates that have been currently charged by Tennessee under—pursuant to undertakings? A. Yes, sir.

Q. Now, Dr. Shaffner, isn't it true under a static rate of return, with increasing cost of debt, and preferred stock capital, a natural gas pipeline will have to trade on equity—that is bring about more leverage if it is to maintain the same earnings on the equity? A. Not necessarily.

Q. Let me make sure you understand the basic premise of my question, Doctor. I am assuming a static rate of return, a rate of return that does not change over a certain given period. I ask you to assume that during that same period, while the rate of return allowance was static, there is an increasing cost of debt, an increasing cost of preferred stock capital that the company is actually experiencing.

Isn't it true that if that company is to maintain the same earnings on its equity over that period of rising senior capital costs, it must trade on its equity—that is, it

1079

must thin out its equity if the return is to remain the same at the end of the period as it was in the beginning of the period?

Do you follow my question? A. Yes, I follow your question. But I don't think the answer necessarily follows.

Q. I didn't think we would have difficulty with that. I thought it was a mathematical fact. But will you tell me

why you have given that answer, then maybe I can see what is wrong with the question, if anything. A. Well, there are other sources of earnings than a given rate of return. For example, let me give you an illustration. American Electric Power, an electric utility has practically never sought a rate increase. They have increased their earnings over a period of years largely through increasing economies of operation, and they are noted as being one of the most efficient operators in the business.

There are nonjurisdictional revenues. In the case of Olin Gas Transmission, which has an all common stock equity, on which this Commission allowed 6½ percent rate of return, it turned up a year later with return on common equity of something like 30 percent.

There are other factors that determine earnings than the mathematical over-all rate of return allowed.

Q. Well, Doctor, perhaps my question wasn't sufficiently

clear in the basic assumption.

Let's take a natural gas company, so as to get it away from the electric industry, where there have been improvements in the arts that have enabled them to live with, let's say, a static rate of return, and still replace or offset the additional cost of senior capital. Let's put those aside, and let's stick first to the natural gas industry. And let's stick to the jurisdictional business.

Let us assume, for the purpose of my question, that the rate of return fixed, let us say the beginning—let's take a five year period—is a certain percentage. And that is all the company is able to get in the way of a return on its rate base, and its revenues reflect that. I ask you to assume a static return in dollars.

Presiding Examiner: Mr. Littman, I am not sure I understand what you mean by a static return in dollars.

Mr. Littman: I am sorry—a static percentage of return, a static rate of return.

Presiding Examiner: You want to assume that none of the other factors change in your hypothetical question, except the increasing cost of debt financing?

Mr. Littman: That is right—except the increasing cost of debt and preferred stock financing.

Presiding Examiner: And that none of the other factors connected with the operations of the company change?

1081

Mr. Littman: That is right.

Mr. Spalter: I would like to inquire at that point, what would the debt be issued for, if it is not to increase the dollars of revenue?

Mr. Littman: Well, I can give you a few examples if you wanf me to.

Mr. Spalter: Well, you say the things remain static. That is what I was wondering about.

Mr. Littman: I said the rate of return remains static. I am not saying the property is not growing.

Presiding Examiner: I asked you, Mr. Littman, you wish the witness to assume all other factors in the company remain the same, except for the increase in cost of debt capital, and you said yes.

Mr. Littman: No. My original question is assume a static rate of return. Now, this witness, then, went ahead and gave examples where the rate of return has not remained static, because he was talking about rate of return going up or increasing because of returns from nonjurisdictional business, and because of improvements in the art. I want to get those extraneous things out of the picture, so we can get a pure example of a company with a static rate of return—such as the Commission fixes a 6 percent return on a natural gas company, on the rate base, and that is where it stays, over a period of five years.

1082

Presiding Examiner: Do you want him to assume for the purpose of your questioning that once the Commission fixes a rate of return at 6 percent, that nothing changes in the operations of the company which might result in the company's earnings thereafter, representing a higher percentage on its investment?

Mr. Littman: That is right.

Presiding Examiner: You are not asking the witness to comment upon the reality of such a hypothesis—I will let him answer that question.

The Witness: I just cannot do it with that type of a question, because I just cannot imagine that these things either remain fixed or change in the way that you assume. It is theoretically conceivable, but as a practical matter it won't happen that way.

By Mr. Littman:

Q. Well, let's take the theoretically conceivable case where the rate of return remains static. The only way I can test the theory here is by taking a Simon-pure case.

Presiding Examiner: I don't know what the word Simon-pure means.

Mr. Littman: My example—I want him to answer my question, and not some other question.

Presiding Examiner: Well, I assume you would agree that if those were the facts—assuming those were the facts, would

1083

you agree with Mr. Littman under those circumstances the only way the company could maintain the same level of earnings on equity would be by thinning out the equity?

The Witness: This becomes a mathematical exercise, in which the answer is obvious.

Presiding Examiner: The answer is yes?
The Witness: Yes.

By Mr. Littman:

Q. Now, Doctor, do you have a copy of the Federal Power Commission statistics for natural gas companies, the 1958 edition? Incidentally, you refer to page 19 of your prepared testimony to the Federal Power Commission "Statistics of Natural Gas Companies", 1958 edition, did you not? A. Yes, sir.

Q. Now, if you please, turn to page XII, you will see a table 5 on that page. Doesn't that table show that the earnings available on average common equity of the natural gas pipeline industry, remain fairly constant from 1948 to 1958, with the 1958, if anything, being somewhat less than the average? A. That might be true. The lowest year is 1949, actually, which is 10.8, and 1954, which was 11.2.

Q. They remain fairly constant, do they not, during that period? A. Yes.

1084

Q. Isn't it also a fact, as shown by Table 2, which is on page 9 of that document, IX, the same publication, that common equity of the natural gas pipeline industry amounted to 40.9 percent of total capitalization in 1948. Do you find that? And only 29.6 percent in 1958? A. What were those figures?

Q. I said 40.9 percent in 1948. A. Yes.

Q. And 29.6 percent in 1958. A. Yes, that is right.

Q. In other words, you have to add two figures—the surplus and the common stock together, which give those figures.

Mr. Littman: Counsel points out the same information is shown on page 35 of Exhibit 21.

The Witness: I was just going to mention that.

(1084)

Mr. Littman: We might have saved a little time if I had recalled that.

By Mr. Littman:

Q. Now, isn't it a fact the statistics just referred to show that leverage has been resorted to by natural gas companies for the purpose of maintaining earnings on their equity, or at least it had that effect, during that 10 year period? A. Leverage has been resorted to, yes, there is no

1085

doubt about that. And I comment on that in my own testimony.

Q. We are going to come to that comment in just a minute. I think then you will be able to discuss that.

Now, at the bottom of page 20 of your prepared testimony, you state that, and I quote, "In view of the rapid growth of the industry, the fact that debt financing has important income tax advantages which are reflected in an advantageous cost of capital, and the absence of any serious business and economic setbacks in recent years, the industry and the public have not been without benefits from this pattern of financing." Do you find that testimony? A. Yes, sir.

Q. Isn't it a fact, Dr. Shaffner, that the income tax advantages associated with large debt financing are all passed on to the customer under Federal Power Commission regulation, and no part thereof inures to the benefit of the stockholders? Do you want that question read back? A. Yes.

(The question, as recorded, was read by the reporter.)

Presiding Examiner: You mean, Mr. Littman, that in computing a cost of service for a pipeline in a rate proceeding, the company is allowed only the actual income tax liability?

Mr. Littman: That is right.

Mr. Spalter: I assume, also, Mr. Examiner, the company here

1086

referred to would be 100 percent jurisdictional.

Mr. Littman: I don't see where that has anything to do with it.

Mr. Spalter: Yes, it would. Not all the interest would be necessarily—

Presiding Examiner: That is a matter of degree. I don't think it affects the question.

Mr. Spalter: Well, I think he had the word "all" in his question.

Presiding Examiner: You mean to whatever extent it relates to the jurisdictional business of the company, I take it.

Mr. Littman: Yes.

The Witness: I didn't say, Mr. Littman, that the stockholder did get any income tax advantage.

Presiding Examiner: The only question is if you agree that the total benefit goes to the rate payers.

The Witness: I think the stockholder benefits in an indirect way, perhaps, Mr. Littman, through the fact that if it were all equity financing it would be more costly financing, and it would, therefore, be more difficult for the enterprise to move into markets where it otherwise could, and this would be reflected in the earnings which would come to the stockholder.

Presiding Examiner: The only question now, as I understand

1087

it, is whether you agree with the proposition that the income tax advantages to which you refer at the bottom of your prepared testimony on page 20 go entirely to the

rate payer under the method of constructing the pipeline costs of service which I referred to a moment ago.

The Witness: Well, certainly that has been the major beneficiary, and I assume the financing was handled in that way for that purpose.

Presiding Examiner: Well, the only question is, is that proposition a sound one? You may have other ideas you want to add. But your counsel can take care of that.

The Witness: Yes, it is true.

Presiding Examiner: All right.

By Mr. Littman:

Q. At page 21 of your prepared testimony, you state, near the top of that page, and I am going to quote it, because it is rather brief, "And there are some"—well I better go back just one line—go back to the bottom of page 20, so as to get the thing in focus. "But it is something of an anomaly that the pipeline industry has employed more leverage than the electric power industry, in which common equity generally averages 36 to 38 percent for companies in three different sized groups with respect to annual operating revenues. And there are some authorities, including the well known team of Graham and Dodd who hold 'that recent financing of

the major pipelines for transmission of natural gas appears to us to contravene the basic principles of prudent investment in fixed income securities' (Security Analysis Principles and Technique, by Benjamin Graham and David L. Dodd, McGraw Hill Book Company, Inc., 1951 Edition, page 337)".

Now, what is your own view with respect to that matter? That is, do you think there should be higher equity than now prevail in the natural gas industry, or not? A. This

is a fairly big subject, Mr. Littman. Unless you want to get into a fairly extensive discussion—

Q. Well, it is a pretty important subject.

Presiding Examiner: Let me ask you this, Doctor. You had some purpose in making the statement you did commencing with the bottom of page 20, and running over to the end of the first paragraph on page 21. I am not sure in my own mind from reading it, in the light of the testimony you have given in the last few moments, as to whether you were conveying one idea in that paragraph, or a number of related or unrelated ideas. But, referring specifically, to the last sentence, the first paragraph on the top of page 21, you had some purpose in mind, I assume, in giving us that quotation. You say now it is too large a subject to discuss.

The Witness: It is not too large, but it is an extensive one.

Presiding Examiner: Perhaps the best thing to do would be

to find out what purpose the witness had in mind in making that statement.

Mr. Littman: That is a good suggestion.

By Mr. Littman:

Q. What is the purpose of your inserting that quotation from Graham and Dodd in your testimony? A. I simply wanted to call attention to the fact which I have discussed in some detail in an immediately prior portion of my testimony, that there had been this shift in leverage in the direction of less equity for the gas pipeline industry, and to call attention in passing to the fact that some people thought this had been carried pretty far. I think the industry thus far has been very lucky in the fact that its growth has been so great, and that there have been no

economic recessions. But other industries and older industries have followed a more cautious policy with respect to debt. And if we were ever to have a serious economic setback, I am sure that the subject of the existing capitalization of some of the pipelines would become an object of vigorous examination and investigation to determine who had been responsible for the situation.

Q. Are we to infer from you testimony that you think that the natural gas industry has reached the point where its equities are too thin, and should be thickened so as to protect against the possibility of future declines in sales

or revenues, or any other things that might and could happen in the future? I want to get your view on the matter. That is all I am interested in. A. Well, I know that the Commission in one or two cases has been concerned with this matter, particularly the last El Paso case, and they announced that the rate of return that they were giving in that case was being given specifically to encourage them to thicken their common equity.

Q. You agree with that, do you? A. I do.

Q. Well, I think you will agree, will you not, that the natural gas industry cannot achieve higher equity very well unless the return is adequate to enable it to do so. Isn't that correct? A. That becomes a problem.

Q. And if the Commission doesn't give the industry sufficiently adequate return to enable the companies to thicken their equity, then they will—they are in effect placing a premium, are they not, a thin equity? Isn't that true? A. It would have that effect.

Q. Now, Doctor, I have only one more reference to make to Graham and Dodd. I don't think I will make any more. We have talked about those two erudite gentlemen perhaps too much already.

But at one point in their book, with which I think you are

1091

quite familiar, page 427, they say, "It should be pointed out, however, that since 1940 the markets emphasis on current earnings appears to have diminished to an extraordinary degree."

Can you tell us whether you agree or disagree with that observation? And then we can pass on to the next question without much discussion.

With respect to a goodly section of the market and investors, that is probably true, and responsible for the heights to which some securities have managed to rise, in which they are discounting not only the future but, it appears, possibly the hereafter.

Q. Isn't it true that the validity of that comment of Graham and Dodd is borne out by the fact that stocks are selling at the present time on a yield basis considerably below yields on bonds? Isn't that one indication of the veracity of that observation? A. Yes. I would put it that the investors have found that there is an important risk in bonds, which I have mentioned in my testimony, namely purchasing power risks, and that stocks provide them with better protection with respect to that risk than bonds do.

Q. Well, do I correctly gather from what you just said, Doctor, that the investor is treating common stocks in a sense as a hedge against inflation? A. That is exactly what I meant.

1092

Q. Now, natural gas pipeline company bonds, as I think Mr. Symonds and Mr. Katzenbach have mentioned, carry sinking fund provisions, do they not, which returns a portion of the money each year, is that right? A. Yes, sir.

Q. Of course to that extent natural gas pipeline bonds are better—in that respect, with respect to inflation, than other bonds? A. Mr. Symonds pointed out in that speech

that the investor gets a look at his money more frequently through the sinking fund.

Q. Exactly right. It always pays to agree with the boss. In this case, I really do agree with him, because I am sure we all know that is a fact.

Now, in this connection, I want to refer you, Doctor, to the Federal Reserve Bulletin for February 1960, page 182. I think you will find I have liberally marked the places I am interested in, so it can be easily found among those thousands of figures. And you will note there, according to Moody's—they quote Moody's in there—corporate bonds had a yield of 4.65 percent in 1959. Do you find that, sir? A. Yes, sir.

Q. And U. S. long term Government bonds had an average yield in 1959 of 4.07 percent. Do you find that? A. Correct.

1093

Q. Whereas the dividend yield on Standard and Poors 500 common stocks was only 3.23 percent? A. Yes, sir.

Q. Incidentally, I just happened to read the Wall Street Journal this morning, and I note this morning's edition—the story was carried about the Treasury being able to sell only $370 million of a new 4¼ percent 25-year bond, and that the debt managers had hoped to sell $500 million of that issue. You are familiar with that situation? A. Yes, sir.

. . . . . .

1096

Mr. Littman: Well, let us get back to my original question, and let me finish it up, and then we will talk about it.

Now, I think we had brought out, to get back on the track, that the Federal Reserve Bulletin for February 1960 showed on page 182 corporate bonds in general, according to Moodie's, had a yield of 4.65 per cent in 1959, and U. S. long term government bonds had an

average yield of 4.07 in that year, whereas the dividend yield on Standard & Poor's

1097

five hundred common stocks, as related to the price, was only 3.23 per cent. Do you recall that?

The Witness: Yes, sir.

By Mr. Littman:

Q. Now, isn't it true—I will give you a chance to comment on this in just a minute—isn't it true that a similar condition prevailed in 1958, and yields on stocks and bonds had been pretty close together—have been pretty close together for several years. I think you will find that in the line above the one referred to.

Do you agree with what I just stated about 1958? A. Yes, sir.

Q. Now, during that year, as shown in your Exhibit 21, starting on page 23, where you show some data for each company in the successive pages—that is, in the year 1959, the dividend yields on common stocks of several natural gas companies which you show in your Exhibit were as follows.

You start with Colorado Interstate, 2.5 per cent, is that right? A. For what?

Q. 1959.

Mr. Spalter: 2.6.

The Witness: That is right, it is 2.5.

By Mr. Littman:

Q. El Paso is 3.9 per cent?

1098

A. Right.

Q. Mississippi River Fuel, 4.4 per cent? A. Right.

Q. Panhandle Eastern Pipeline Company, 3.5, Southern Natural 4.9 per cent. Is that right? A. Right.

Q. Tennessee Gas Transmission, 4.1? A. Right.
Q. Texas Eastern, 4.4? A. Right.
Q. Texas Gas Transmission, 4.0 per cent? A. Right.
Q. Transcontinental, 4.2 per cent? A. Right.
Q. Did I skip Northern Natural? If I did, I am sorry. A. Yes.
Q. 4.4 per cent? A. Right.
Q. Now, these dividend yields on these natural gas companies, and the figures which I have mentioned which range from a low of .5 per cent to 4.9 per cent, came at a time when some U.S. Treasury securities sold at a yield as high as 5 per cent, isn't that true? A. 1958?
Q. 1959.

A. Yes, 1959, that is right.
Q. Now, Dr. Shaffner, do you share the views of Graham & Dodd as expressed on page 457 of their book that, "It is a basic assumption of this book that the processes of the stock market are psychological more than arithmetical." A. I think that is correct.
Q. Now, earnings price ratios of course are purely mathematical figures, are they not? A. As data they are mathematical, but they reflect psychological attitudes.
Q. In the past. Up to the time they are computed. They don't reflect the investor's forecast of the future, do they? A. They certainly do.
Q. What? A. They do.
Q. You mean the figure you get when you divide the earnings for the past year into the price of the stock, average price for the past year, or the current price, whichever is used—that the figure you get there reflects some future, that are not included in the computation? A. The price reflects everything that summarizes the reasons why the investor decides to purchase that particular stock, and

it includes his evaluation of past data, his estimates of the future, what he thinks of the management—

1100

everything else is all wrapped up in that price. So one part of your fraction certainly does reflect an estimate of the future. And I have pointed that out in my testimony.

Mr. Littman: May I have that answer read back, please.

(The answer, as recorded, was read by the reporter.)

By Mr. Littman:

Q. Would you please refer to page 22 of your prepared testimony, Dr. Shaffner,— A. Incidentally, Mr. Littman, I have pointed it out in the middle of page 28 of my testimony, if you want to see exactly where it is.

Q. At the top of page 22 of your prepared testimony, you state, and I quote—the question—"What is the use of certificates in an earnings price ratio?" "Answer: Many investment advisory services and security analysts regard earnings price ratios as a reflection of the rate at which investors are capitalizing, from investments in common stocks, they are used to compare one stock with another, and provide a measure of what it takes in the form of earnings to induce investors to buy common stocks. From this point of view, they provide an indication of the cost of capital in the form of common stock."

Have I read correctly from your testimony?

1101

A. Yes, sir.

Q. Now, I indicated there that one of the main uses of earnings price ratios, is to compare the relative merits of common stocks, is that correct? A. Yes, sir.

Q. Now, on page 23 of your prepared testimony, you refer to page 18 of your Exhibit 21, which shows offerings of natural gas pipeline company common stocks, and you

state that column K shows what the investor was buying in the way of earnings on equity.

Now, this, coupled with other parts of your testimony, seems to imply that the figures in column M, which reflect the relationship to net proceeds, are measures of the cost of equity capital. Is that correct? A. Yes, sir.

Q. Now, in this same connection, on page 17 of your testimony, you state that Tennessee sold 1,600,000 shares of common stock on February 16, 1960, at $34.50 a share. What were the earnings per share on Tennessee's common stock at that time? A. The latest twelve months available, earnings were $1.93 a share.

Q. Now, will you please relate those earnings to the $34.50 price, or proceedings, I should say, of the stock?

A. Proceeds were—

Q. No, to the price of the stock. Let us stick to the price first—$34.50. Price of the stock. Does that give you an earnings— A. It gives you 5.6 per cent. That is in Column K.

Q. And that 5.6 per cent is the earnings offering price, is it? A. Yes, sir.

Q. I am sorry—I should say the earnings offering price ratio. A. Yes, sir.

Q. Dr. Shaffner, do you contend that this earnings offering price ratio of 5.6 per cent represents the cost of common stock capital to Tennessee at a time when certain government bonds were selling to yield almost 5 per cent, and when triple A bonds were selling at about the same yield?

Presiding Examiner: Read the question back.

(The question, as recorded, was read by the reporter.)

The Witness: Yes, I do indeed.

By Mr. Littman:

Q. And is it your testimony, or your recommendation, that this 5.6 per cent so-called cost of equity capital should be applied to Tennessee's book equity in arriving at the fair rate of return to be allowed in this proceeding?

1103

A. I have not made any such recommendation.

Q. You would recommend that that not be done, is that right? A. I just haven't made any recommendation.

Q. You haven't made any recommendation one way or another? A. That is right.

Q. Do you know, have you computed any computation to determine just what would happen to Tennessee Gas Transmission Company if any such thing as this were done? A. I think Mr. Symonds has some data on that subject in his testimony.

Q. Do you agree with his conclusions in that regard? I don't know what particular part of his testimony you are referring to. Let me withdraw that question. Let me ask you whether you have made any computation to see just what would happen to Tennessee Gas Transmission Company if this Commission were to determine the rate of return for Tennessee by applying any such figure as 5.6 per cent to equity to determine the allowable return on equity. A. No, sir, I have not yet reached that stage.

Q. What was the answer? A. I said no, I have not yet reached that stage.

Q. What do you mean when you say you have not yet reached that stage. The word "yet" has certain implications.

1104

A. Well, let us just say I have not yet done so.

Q. Do you have any present intention of making such a recommendation in this proceeding? A. No, I don't think so.

Q. Now, will you kindly follow some of these figures. You may want to write them down, Doctor, because you may not be able to carry them all in your mind.

According to your Exhibit 24,—I want to see where we would come out if any such a thing were done—the common equity of Tennessee per your consolidated balance sheet figure is $377,967,773. Am I right? A. Yes, sir.

Q. Now, applying a rate of return on equity to that amount of common equity of 5.6 per cent, would produce, as I will ask you to accept my arithmetic, a return on equity of $21,166,195. I will ask you to accept that subject to check.

Now, as of February 29, 1960, Tennessee had outstanding 24,978,660 shares of common stock, is that right. Does that figure strike a responsive chord in your memory? A. Yes.

Q. Now, the earnings per share on that basis, that is by dividing the amount of return of equity, 21 million plus, by the number of shares that I just gave, would be 85 cents per share. I will ask you to accept our arithmetic there—using a payout ratio of 70 per cent, which is I think the

current payout ratio of Tennessee, would leave about 60 cents per share as the dividends on our common stock. Do you follow me up to this point? A. Yes, sir.

Q. Now, we have been paying for at least twelve years, I understand, a dividend of $1.40 per share. You understand that, do you not? A. Yes, sir.

Q. Now, what would happen to Tennessee's stock if the Commission were to allow such a rate of return as 5.6 per cent on the common equity of Tennessee which would result in a 60 per cent dividend. Looking at these figures and accepting them as mathematically correct, what would happen to the stock?

Mr. Spalter: Excuse me. I wonder if we might go back to the question before, where counsel mentioned something about twelve years' payment of dividends.

Mr. Littman: Well, on that point—

Presiding Examiner: Off the record.

(Discussion off the record.)

Presiding Examiner: On the record.

Mr. Littman: I will not stand on my twelve year, $1.40 dividend. I would have to go back and re-evaluate that in the light of putting it on an equivalent basis.

1106

By Mr. Littman:

Q. But you do know, don't you, Doctor, that we are now paying $1.40 per share on our common stock? A. That is right.

Q. And that is on the number of shares presently understanding? A. Yes, sir.

Mr. Littman: It is my understanding Mr. Spalter, that we have for many years declared the $1.40 per share on the number of shares outstanding at the time. Now, of course as more shares were issued, looking back in retrospect, it could be less than $1.40 today looking backward. But the facts are facts, and I am sure they are shown somewhere in this record.

By Mr. Littman:

Q. Without going into how long that $1.40 dividend has been paid, knowing what you know, what would happen to the stock of Tennessee if any such thing as this were to happen? A. You are asking me to assume a hypothetical situation, and to construe a hypothetical result.

Q. Well, if you don't want to make any predictions, you are perfectly within your rights not to do so, because it

is a hypothetical thing. I certainly hope it is. But there isn't any question in your mind, is there, Doctor, that the price of Tennessee's stock would certainly go down in the face of any such event, wouldn't it?

1107

A. It might be adversely affected.

Q. That is the understatement of the year.

Did you mean that facetiously, or did you want to address yourself more seriously to it? A. I meant it seriously.

Q. You said it might affect this stock adversely? A. Yes, sir.

Q. Is there any such a term as "cost of capital" as applied to equity capital in your book, the book which you wrote entitled "The Problem of Investment"? A. I don't believe so.

Q. I think you will agree that it is not found in Graham and Dodd's book, is it? A. I would have to look before I could tell you.

Q. Do you recall having seen it there? A. I don't find it in the index.

Q. Let me see if we can button up this particular part of your cross-examination.

Isn't it a fact that the term "Cost of Capital" when applied to equity, as distinguished from debt and preferred stock is a term which has been used by rate of return experts to describe what they ultimately determine is a fair allowance on the common stock equity capital? That is, isn't it purely a term of art used in rate of return matters? A. Well, I don't use it that way. Allowance on

1108

common equity I label allowance on common equity. Now, I am not quite sure what other people do.

Q. I didn't say allowance on equity capital. I used the

term "cost of equity capital." If you look at my Exhibit 24, you will notice in the heading at the middle of the page, "Allowance for Stockholders' Equity." That is a term that I used.

Q. I don't have any quarrel with that term. My quarrel is with the term "Cost of Equity."

Mr. Spalter: Are you referring to any specific page in his testimony?

Mr. Littman: It is all over the direct testimony, here and there and everywhere else.

Mr. Spalter: Give us the specific reference, and we will see what it is.

Mr. Littman: Do you remember using that in your testimony?

The Witness: Yes, I believe I did. And the cost of equity capital of the last issuance of Tennessee's common stock was 5.9 per cent. And you will find it on page 18, under row PL 23, column M.

By Mr. Littman:

Q. For instance, I note on page 25 you say, "I conclude that the cost of debt capital and the cost of equity capital have moved," and so forth?

A. That is exactly right, Mr. Littman. And in connection with this Federal Reserve Bulletin that you showed me, I would like to call your attention to what seems to me a much more complete source of the same data, also published by the Federal Reserve Board which is found in their monthly chart book. And here is a chart which shows both bond yields and stock yields and earning price ratios going back to 1952.

Q. Is there any word such as "cost of equity capital" on that chart? A. No.

Q. Well, that is what I am addressing myself to as a matter of a term.

Now, we know, and we are dealing with contractual securities, such as bonds, that there is a contract to pay a certain rate, interest rate. Now, in that case, of course the term "cost of debt" is commonly used. The same is true in the case of preferred stock, where there is a specific contractual dividend rate. There, too, everyone calls the cost of preferred stock.

Now, I am addressing my question to a non-contractual yield, a non-contractual return on the equity of the company. Isn't it true that the term "cost of equity capital" is simply a term that is used rather loosely by experts on the subject of rate of return, not having reference to any actual

1110

cost, so much as to the return allowable on the equity. Do you follow me? A. Well, I don't know how loosely they use it. But the fact is, Mr. Littman, that profits, which are what the return on equity capital is, are generally recognized by economists as a cost, although it is not an expense. And it is the only element of cost which is in that category, because it is non-contractual. It is a residual element—what is left over.

Q. That is exactly my point. In the case of the common stockholder he is in a sense what you might call the residual legatee. He owns everything that is left over after the payment of the contractual interest on the debt and on the preferred stock, isn't that true? A. That is right. And also legally, he is the owner of the business.

Q. That is right. Now, if you wanted to determine what he receives, or, on the other hand, what the company pays to him, then you have got to find out how much over the years is left over for the stockholder. That represents in a sense the cost to the company, isn't that true—cost

to the company of that equity capital? A. In that sense, yes.

Q. That is all I was talking about. And if you wanted to find out, wouldn't you be well advised to go to your own exhibit here, Exhibit No. 22. Doesn't Exhibit No. 22 called

1111

"Return Earned on Average Book Value of the Common Shares," show in a true sense what the company has—I mean, what the companies—they are shown, all the natural gas companies there shown—have through the years 1951 through '58, paid for their common stock equity? A. I think I see what you are driving at now, Mr. Littman. No—I consider this to reflect simply return on book value. The cost I consider to be what it takes to attract the capital which is shown by earnings price ratios. And both concepts, under Supreme Court decisions, are relevant.

Q. Well, let us look at Exhibit 22.

. . . . . .

We were discussing Exhibit 22 at the recess. That exhibit shows, does it not, the return earned on average book values of the common shares of the ten natural gas pipeline companies there shown for the years 1951 through 1958, is that correct? A. That is right.

1112

Q. Now, during those years, the companies earned these percentages of return on their common equities as reflected on their books, and they either paid that money out, either in dividends to the stockholders, or they retained it in surplus and plowed it back into the company, did they not? A. Yes, sir.

Q. And in a real sense, of course, these earnings belong to the stockholders, don't they, since, as you said a while ago, they represent the residual legatees in the business,

isn't that true? A. These represent the return on the stockholder's equity, and he has an equity even in the earnings that are not paid out in dividends.

Q. That in a real sense, looking back through the years, this exhibit does show the historical cost to the company of the equity capital which they obtained from the stockholders, isn't that true? A. Yes, sir.

Q. You mean to say that it didn't cost—for instance, it didn't cost the Tennessee—the average, ranging from 15.9 to, let us say, 16 per cent, through these years, the equity. Didn't it cost them that, looking back in retrospect, either by way of paying it out in dividends to their stockholders, or paying it back into the business?

Presiding Examiner: When you say did it cost the

company, aren't the stockholders the company?

Mr. Littman: Yes, in a sense they are the company.

Presiding Examiner: Well, isn't this semantics here?

Mr. Littman: No. This is what the stockholder actually got. This percentage is what the stockholders actually receive as a return on the book value of their equity—isn't that true?

Presiding Examiner: You would agree with that proposition, I take it?

The Witness: Yes. But that is not a cost.

By Mr. Littman:

Q. Well, the book value of the stockholder's equity represents the sum total of all the dollars that the company received from the stockholders from the sale of the stock by Tennessee to the stockholders, plus retained earnings, isn't that true? That is what the book equity represents, isn't it? A. That is right.

Q. All right. Now, in connection with this matter of return of common stock equity, you, I am sure, were here

when Mr. Gardner Symonds read into the record a quotation, starting on page 639, running over to 639 of the Transcript, from the NARUC 1959 report. Do you remember? A. Yes, sir.

Q. Now, without quoting it again, and in order to save

1114

time, you are familiar with that quotation, are you not, from the Corporate and Finance Committee of the NARUC? A. I have had two somewhat similar statements made in the two preceding years by the same organization. I don't know that I have read the latest one.

Q. Do you agree with the conclusions there expressed by the NARUC? A. I think the conclusions there expressed are somewhat ambiguous. I would agree with part of them, but not with all of them. And I don't think I agree with the general purport of their conclusions.

Q. In 1958 the NARUC, the Seventieth Annual Report of the NARUC, contains the following conclusions arrived at by the report of the Corporation Finance Committee, which is the same committee for the previous year. I will not read the whole thing. It is a matter of public record. But I do want to read one sentence, or two sentences from that report, and ask you specifically whether you agree or disagree with it.

This is referring of course to the common stock.

"Among utilities also, there are many instances in which the current dividend-price ratios are lower than the yields on bonds and preferred stock. This, once again, demonstrates that the use of low current earnings price and current dividend price ratios are meaningless as a measure of investor expectations, and therefore inadequate as a measure

1115

of the cost of common stock equity."

Are you familiar with that statement? A. Yes, sir.

(1115)

Q. Do you agree with that or disagree with it? A. I certainly disagree. If they were meaningless, they shouldn't be used at all. And this is why their statement is ambiguous. Because a little later on its says they should be used with discretion. If they are meaningless, they should not be used. They say they should be used with discretion, which means they should be used under certain conditions. So I say their statement is ambiguous. And with that part of the statement that says it is meaningless, I disagree with strongly.

Q. Well, do you agree or disagree with the statement that you referred to later on where they say it should be used with discretion? A. I agree with that.

Q. In other words, you don't believe that they should be applied literally? A. Strictly.

Q. That is, you don't believe they should be applied—— A. Strictly, or on a spot basis.

. . . . . .

1117

Now, Dr. Shaffner, I will use you as my victim in this situation. Are you going to give us the benefit of suggesting to us in this proceeding, assuming as you have advised us now that earnings price ratios should be used, but that they must be used with discretion—are you going to help us out now by telling us how we should use them? Or does the Examiner

1118

and the Commission have to wrestle with that problem without assistance?

The Witness: Unfortunately, Mr. Examiner, that is primarily your province. However—

Presiding Examiner: Well, I don't think the rules of the game require that the Examiner and the Commission are the victims who must wrestle with a problem which the experts cannot answer.

The Witness: I will say this. There are three basic tests of rate of return given by applicable Supreme Court criteria. Two of them I consider quite specific, and one of them rather general and overall. The three tests are what it takes to attract capital——

Presiding Examiner: Just a minute, Dr. Shaffner. We are all familiar with those tests as laid down in Supreme Court decisions.

The Witness: That is right.

Presiding Examiner: We have all read many decisions on rate of return, in which those statements by the Supreme Court are quoted at length. But it is a far gap from quoting those statements, or those tests, as you call them, to answering the question I have put to you. I am not troubled about understanding what the Supreme Court has said. I am troubled with how to apply the proposition of using the earnings price ratio, and then determining what to add to it

1119

for sweetening or bonus, or how you measure it, or what. It is not enough to tell me that the Supreme Court has said that the tests are what we all know the Supreme Court has said.

The Witness: Well, I will be glad to try to translate it into more specific terms. What I consider to mean what is meant by the cost of attracting capital are earnings price ratios. That gives you the answer to one of your tests. And I think I have said so in my testimony.

The second criterion is what other enterprises of comparable risks, are earning on their equity. And that is provided by Exhibit 22.

So between Exhibit 23 and Exhibit 22, you have basically the data required by two of the three tests. The other test, the overall financial integrity, presumably would be met if these tests are met although it might require some addi-

tional data in some specific cases, where there were imminently maturing bonds, or something of that kind, or a deficiency in working capital, or some peculiar situation.

Presiding Examiner: I take it, Dr. Shaffner, you are not yourself advocating here that we should use the earnings price ratio in this proceeding, and then add to it some factor in order to insure that we are able to maintain a given allegedly necessary spread between market value and book value of Tennessee's common stock? I know you are not advocating it, because you have not advocated it in your direct testimony.

1120

Does that mean that is not the method you recommended?

The Witness: No.

Presiding Examiner: You are not recommending that method?

The Witness: No, I am not. I am simply saying that Exhibit 22 gives you data which meets one criteria of the Supreme Court, and Exhibit 23 gives you data which meets another criteria of the Supreme Court. I have also said in my direct testimony that I consider earnings price ratios to be a floor or a bare minimum. And presumably, you would not stop at that point.

Presiding Examiner: But unlike some staff rate of return witnesses, and I have in mind particularly the one who testified in the proceeding before me, to which I made reference, you do not suggest that we should add some measured bonus to the earnings price ratio floor?

The Witness: If the earnings price ratios and the return on book value coincided, and they have in some situations then it might be necessary to make some such adjustment. But when in present circumstances there is such a wide difference between the data given by the two criteria, when you take both of them into account, you automatically add something to the lower limit.

Presiding Examiner: Well, will you explain to me, if you should have the responsibility of writing a rate of return decision in this proceeding, will you explain to me how

1121

I should take into account the return earned on book value as shown on Exhibit 22 in connection with the earnings price ratio as shown in other portions of hour exhibits, and what I should do with it?

The Witness: Well, I would take the two sets of data, and arrive at a final figure that would represent something in between what the two sets of data will give you, giving whatever weight to each set of data you thought appropriate in the circumstances.

Presiding Examiner: All right.

The Witness: That is what I would do.

Presiding Examiner: You think the result I might arrive at would be something like flipping a coin?

The Witness: No, sir.

Presiding Examiner: Or would it have a more scientific basis?

The Witness: No, sir, I do not think it would be like flipping a coin.

Mr. Werner: I cannot hear the answer.

The Witness: I said it would not be like flipping a coin. But where the governing criteria say you should take several things into account, the only way you can follow that is to take those several things into account. And presumably you will get a result which reflects, to some degree, each of those factors.

1122

Presiding Examiner: I don't mean really to put the staff on the spot here, and I am aware of the fact that the staff in these proceedings follows a policy of presenting a rate

of return witness to present certain statistical data. But the witness does not in himself express an expert view as to what rate of return should be derived by use of that data, or how it should be derived. The fact of the matter is, however, that Dr. Shaffner, in my opinion, has gone far beyond merely presenting statistical data. In the prepared testimony he has given us the benefit of a great many conclusions of his own, and views of his own.

Now, it seems to me that it would be far more helpful to the record if we could have a rate of return expert explain to us how this data should be used, and how he would recommend it should be used, and then to have him cross-examined by the parties as to those theories he has expressed. It would be far more helpful than leaving the gap in the record and filling it in in the briefs.

Mr. Spalter: Mr. Examiner, what you say would be helpful is exactly what Dr. Shaffner has presented here—as to his views on the data and his conclusions with respect to the data. We have stopped short of recommendation of a specific rate of return. There is no doubt about that.

Presiding Examiner: You have also stopped short of a recommendation as to what should be allowed on equity capital.

1123

Mr. Spalter: Yes, sir, because that is part of the overall rate of return.

• • • • • • • • • • •

1127

By Mr. Littman:

Q. Dr. Shaffner, would you please turn to page 39 of Exhibit 21. Now, the chart on that page shows earnings price ratios of certain natural gas pipeline company common stocks? A. That is correct, yes, sir.

Q. Now, if instead of plotting earnings price ratios, you had plotted the two elements thereof separately—

namely, earnings and price—both would have shown an upward trend, isn't that correct? A. Yes, sir.

Q. The reason the chart shows a downward trend is because

1128

the market price of the stock increased more rapidly than the earnings, isn't that right? A. That is right.

Q. And isn't it also correct that the fluctuations shown by the chart are due chiefly to the market price fluctuations rather than to changes in earnings because there was a comparatively steady upward trend in earnings, is that right? A. One would have to make a study to be certain, but I would assume that that would probably be the case.

Q. If you look, to refresh your recollection, Doctor, at page 16 of Tennessee's Exhibit No. 13, I think you will find that the study really has been made there. It is depicted right on that very chart. Do you have a copy there? This chart of course presented by Mr. Symonds is for 24 utility stocks. But nonetheless, it does show that the earnings and dividends have trended gradually upward about 1943 on to date, and that the prices of the stock have gone up, more or less up and down, but in a much more steep incline? A. Yes, sir.

Q. Is that right? A. Yes, sir.

Q. And you would expect the same to be generally true of the natural gas stocks, wouldn't you, over that period?

1129

A. I would think there would be no major difference.

Q. Now, I want you to assume with me, Doctor, that a natural gas pipeline company has a capital ratio of 60 per cent debt, 40 per cent common equity, with the debt costing 3 per cent. Then under a 6 per cent overall rate of return, we would have the following, would we not. You might want to jot these down.

(1129)

Capitalization would be 60 per cent. The cost would be—for the debt capital—3 per cent. The return for the debt capital would be 1.80 per cent. Am I right so far? A. Yes, sir.

Q. Then the 40 per cent of equity would consist of—well, the cost of that equity would be 10 and a half per cent. And the return for that equity would be 4.20, which when added to the 1.80 per cent return for the debit capital would give you an overall return of 6 per cent. Isn't that right? A. Yes, sir.

Q. Now, let us assume that the cost of debt increased to 4 per cent, with no change in the capital ratio, and that the earnings price ratio adjusted fo: cost of financing and underpricing became 9 per cent. Do you follow me so far? A. Yes, sir.

Q. Then as I understand it, if the earnings price ratio

1130

were used at the cost of common equity, the cost of capital would be as follows:

60 per cent of 4 per cent debt capital, with a return of 2.40 per cent for the debt capital. Then you would have 40 per cent of 9 per cent equity capital at a return of 3.60 per cent, giving you an overall return of 6 per cent. Do you follow me so far? A. Yes, sir.

Q. Now, I believe we have already agreed that—let me withdraw that.

Let me ask you this. What would be the market effect of—probable market effect of a decrease in earnings on equity from the 10.5 per cent to 9 per cent, which I have acked you to assume in this hypothetical case, such decrease amounting of course to about 14.3 per cent. What effect would that have on the price of the stock? Would it force it down naturally, all other things being equal, of course? A. Well, Mr. Littman, I understand your principle. And if you applied it vigorously enough, and to

its sufficient extent, it would have that effect. In the particular case you cite, I don't think the effect would necessarily be noticeable.

Q. Well, let us suppose that the decrease in the earnings on the equity would represent a complete reversal of an upward trend that has existed for a number of years in the past.

1131

Is it your testimony this would—this reduction in the earnings on the equity would not have any appreciable effect on the price of that stock? A. That could be the case.

Q. What would bring such a condition about, bearing in mind that I asked you to assume all other things being equal now? A. I will be glad to bring into the hearing room a chart of such a stock, where such a thing happened, next Monday, if you wish. It has happened.

Q. Well, I suppose things have happened in special cases. But as a normal proposition, you would expect the price of the stock to go down, wouldn't you? All other things being equal—in a case where the return on equity take is reduced? A. Well, certainly I would hold, and I do hold, that over the long run—and I really mean the long run—prices are related to earnings. And if you had a long run reversal of earnings, you would have a long run reversal of prices.

Q. It is true, is it not, that investors have a choice of many investment opportunities, including investment in debt securities, some tax exempt, and in numerous sundry kinds of equities. That is true of course, isn't it? A. Many investors do. Some investors do not have a choice.

1132

Q. Well, you are speaking of those who have restrictions, such as trustees and so forth? A. Yes, sir. They are among our largest investors.

Q. But fellows like you and myself, we don't have any restrictions. We have a choice. The only restriction we have is lack of money. A. Employees of the Federal Power Commission have some additional restrictions, too.

Q. And isn't it a fact that most trusts can now buy common stocks, which represents a change in the past situation? You know that. A. It is becoming more liberalized.

Q. Now, if investors can buy Government bonds and other gilt-edged securities—gilt-edged bonds, with a yield of about 5 percent, would you think they would continue to buy securities of regulated companies yielding no more, but frequently less, if they believed at a time of rising costs that debt capital, with the returns allowed on equity by regulatory commissions, would be reduced?

Mr. Spalter: May we have that question?

(The question, as recorded, was read by the reporter.)

The Witness: Well, Mr. Littman, the whole period since 1942 has been one in which, generally speaking, dividend-yields and earnings yields have been decreasing on common stocks, and yet it has been a period of very active purchase of common stocks by investors. This shows that they have been buying such common stocks, and are buying them, in the face of the fact that

the returns in the form of yields and the relationship of earnings to price, is a declining one. I call that to your attention as a fact.

Q. Well, I am talking about returns on equity. Is your answer to my question yes or no? A. I am speaking of equity securities.

Q. Then your answer to my question is what—yes or no? I still don't know what your answer is.

Presiding Examiner: Read the question again.

(The question, as recorded, was read by the reporter.)

The Witness: It would depend on the extent of the situation, and how it was publicized. But I would say it could happen, yes.

By Mr. Littman:

Q. What would you normally expect to happen—not what do you think might conceivably happen. I want answers, if you please, that address themselves to what you would normally expect investors to do. A. I think investors will continue to buy securities of regulated industries regardless of what this Commission does.

Q. Regardless of the earnings? A. Yes, sir.

Q. What? A. Yes, sir.

1135

Q. Well, Dr. Shaffner, do you know Mr. Blanchard, who is a co-worker of yours in the Staff of the Federal Power Commission, in the Rate of Return Department, if I may call it that? A. Yes, sir.

Q. Now, he testified in his—page 10 of his prepared testimony, in re Cities Service Production Company, Docket G-9510, "Please note that the lower the earnings price ratio or capitalization rate, the higher would be the value that the market is placing upon the company's prospects." Do you agree with that statement? A. Well, the mathematical meaning of it is the higher value being placed upon its earnings, and if you enlarge that to include earnings prospects, that could be—

Q. Well, do you agree with Mr. Blanchard's statement? A. I think that is more or less generally true. But I

would rather not express an opinion on somebody else's opinion.

Presiding Examiner: That statement sounds to me pretty much like the position you have given in your testimony.

The Witness: Yes.

Presiding Examiner: That the market price investors are going to pay for the common stock is based not only upon the earnings already obtained, but based upon their own estimate as to what the earnings will be in the future.

1136

The Witness: It includes everything they know or can guess about the company with respect to both its past and its future.

By Mr. Littman:

Q. Well, I understood you to say a minute ago, in your answer to my earlier question, that they were not interested in future earnings. They were just interested in the price at which they were paying at the particular moment as related to the earnings that were being paid at the particular moment. Isn't that your testimony?

Mr. Spalter: I don't think that is a proper paraphrase.

Mr. Littman: The record, of course, will speak for itself.

By Mr. Littman:

Q. Let me ask you this, Dr. Shaffner. I am an investor, and I find that today the earnings price ratio of a common stock of a natural gas company comes to about 5 percent. I think there are some like that here in the evidence. Now, that 5 percent is a mathematical figure, as you know, arrived at by relating the average price for the past year to the earnings of the past year. That is an earnings-price ratio. Do you follow me? A. Yes, sir.

Q. Now, I can at the same time get 5 percent on a AAA bond, or on Government bonds. That is not an unusual

1137

situation today, is it? A. It is becoming a little more difficult, but you can get nearly 5 percent.

Q. Now, Doctor, is it your testimony that when a person in that position buys a common stock of a natural gas company, that he is buying it with the expectation of earning and receiving no more than 5 percent on his investment in that stock in the future? A. Well, actually, if the earnings price ratio was 5 percent, he wouldn't even be getting 5 percent, because the dividend rate would presumably not represent a full payout of earnings.

Q. All right. Then why is he buying that common stock under those conditions, when he can get gilt-edged securities yielding the same return or a higher return? Why would he be doing that? A. Presumably because he has looked at what has happened to the price history of some bonds, and decided that common stocks offer him certain forms of protection that bonds do not offer him.

Q. You mean—you feel that the investor today thinks that the common stocks of a natural gas company are a better security risk than Triple A bonds of an electric company, or a U. S. Government bond? A. As I pointed out in my testimony—

1138

Q. Is that your testimony? A. From certain points of view, yes.

Q. Well, Doctor, now, then, let's take the 5 percent that this investor gets on the common stock of the natural gas company, based on earnings price ratios. You take that 5 percent, and apply it to the book equity of the company, where the book equity is one-half the market price. And that is, of course, a very, very common situation. Then the net effect is that all he gets is two and a-half percent. Isn't that true? Two and a half percent return

on his investment? A. Your mathematics, I think, are self-explanatory.

Q. All right. Isn't it true, Doctor, that today the market prices of common stocks are at least double and in very many instances more than double the book value of the equity, of common stocks of natural gas companies? A. This is true, Mr. Littman. But let me remind you that if the company were to issue a sufficient amount of additional common stock, the book value would be gradually brought up to the market value, and this is one reason why it is regarded as a healthy regulatory practice to encourage a book value in excess of market value, so that when additional stock is issued, it does not dilute the book value, but instead helps to pull it up?

In other words, if sufficient additional stock were issued,

the book value would be brought up to approximately the market value, and there would then be no discrepancy.

Q. How are you going to attract all the capital? A. Well, that is just another mathematical fact, Mr. Littman.

Q. You can't run a company on mathematics. You have got to run it on attraction of capital. Isn't that true? A. You have to attract capital if you need outside capital to expand, yes.

Q. And you have to have earnings to support the attraction of capital, don't you? A. Yes, sir.

Q. Now, on page 25 of your testimony, you state that the return on net worth of over 1800 manufacturing corporations as reported by the First National City Bank of New York declined by 47.6 percent between 1948 and 1958. Do you mean that the return was that much less in 1958 as compared with 1948? A. No. Well, I am not sure of your question. But I mean that the return in 1958 was that much less than what the return was in 1948.

Q. All right. I think that means the same thing. Isn't

it a fact that the return in 1948 was about the highest on record? A. That was the highest since 1945, I believe.

1140

Q. And isn't it a fact that we had a recession, or a decline in business activity, in 1958, and that the returns in that year were the lowest since World War II? A. Those were the lowest since 1945.

Q. Are you familiar with the comprehensive statistics on earnings of manufacturing corporations is compiled and issued jointly by the Securities and Exchange Commission and the Federal Trade Commission? A. I am generally familiar with it, yes.

Q. Well, perhaps we can save a little time by going directly to the corporate earnings on net worth as shown by the First National City Bank and stick to those.

Presiding Examiner: Mr. Littman, it is about 4:30 now. Do you have something you just want to finish up?

Mr. Littman: I think we can button up this thing pretty quickly here.

By Mr. Littman:

Q. Do you have the percentage earned by the 1800 manufacturing companies that you used—return on net worth that you used for 1948? Maybe you have a worksheet there. If not, I will read them to you, and ask you to accept them subject to check. A. I had it, but I can't lay my hands on it.

Q. In order to save time, let me read it to you. I am going to start with 1948. According to the First National City

1141

Bank, the returns earned by 1800-plus manufacturing corporations—was in 1948, 18.2 percent. These are returns on net worth. A. That net worth includes preferred stock, however.

(1141)

Q. Well, whatever is included by the National City Bank in the meaning of their term net worth. These are the percentages shown in their bulletins. In other words, the same figures that we understood you quoted.

1949 was 13.9 percent; 1950 was 17.1 percent; 1951, 14.4 percent; 1952, 12.3 percent; 1953, 12.7 percent; 1954, 12.4 percent; 1955, 15 percent; 1956, 13.9 percent; 1957, 12.8 percent; and 1959—I am sorry—1958 is the last one we have, 9.8 percent.

Now, what you did, Doctor, was to compare the highest in those years—the highest figure of 18.2 percent, with the lowest figure in all those years, isn't that right? A. That is true. But the chart that I referred to shows a generally downward trend during this period. And I believe there are very few upward zigs in that downward trend.

Q. Of course the figures speak for themselves. But you will note that 1957, '53, '54, and '52 were pretty much the same, were they not? And, of course, you do know, don't you, that 1959 is going to be certainly much better than 1958, isn't that true? Despite the steel strike. A. Yes, I believe the figure is already available.

1142

Standard and Poors show earnings of about 11 percent better for the pipelines in 1959. But this chart, Mr. Littman, I consider, does reveal an unmistakable trend, and it is the kind of trend that you could fit a straight line to by the least squares method.

Q. Well, do you have the August Newsletter there, August 1959? A. Yes, I have it right here.

Q. Now, does that show the earnings for the first half of 1959 as compared with 1958? A. Yes.

Q. And what does that show by way of an increase in those two comparable half years? A. For total manufacturing?

Q. Yes. A. It shows 65 percent change for 608 manufacturing companies.

Q. It shows a 65 percent increase in 1959 over 1958, is that right? A. That is right.

. . . . . .

1144

By Mr. Littman:

Q. Doctor, you indicate on page 26 of your prepared testimony that in times of depression, earnings-price ratios are high. Does this mean that in times of depression high returns must be allowed on common equities, and that in buoyant economic times low allowances are called for? A. Well, I think the logic of the situation, Mr. Littman, indicates quite clearly that people consider that investment risks are higher in time of depression and therefore they need more inducement than they do in times of properity.

And strictly from a risk standpoint, I think the facts show that not only are earnings-price ratios higher in time of depression, but yields, common stock yields, are higher in time of depression. And this, too, indicates that investors consider risks at such times to be greater and therefore demand a higher return.

Q. Well, if you rely on earnings-price ratios in fixing the overall rate of return, that would mean, would it not, that

1145

you would allow a higher rate of return in times of depression than you would in times of prosperity? A. From the point of view of attracting capital, it is more difficult to attract capital in times of depression and more inducements must be offered.

Presiding Examiner: I do not think that directly answers the question.

Read the question back.

(1145)

By Mr. Littman:

Q. He was nodding his head in the affirmative but he did not say, Yes. A. Well, I would say, Yes.

Q. "Yes," is the answer to my last question? A. Yes.

Q. Dr. Shaffner, at page 29 of your prepared testimony, you state that, if the Commission did not do certain things that you mentioned there, it would not be following the criteria laid down in certain applicable Supreme Court decisions. And earlier in your testimony, back on page 6 of your prepared text, you identify one of these cases as the Bluefield Water Works and Improvement Company versus Public Service Commission of West Virginia, 262 US 697 at page 692; is that right? A. Yes, sir.

Q. Now, referring to the Bluefield decision, you recall,

1146

I am sure, the following language that is used, in part, in that famous quotation:

"A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment."

I will end the quote there and stop at that point.

Now, does that mean that in times of depression when there are few or no opportunities for investment, returns should be lower than when times are good and there are almost unlimited opportunities for investment? A. Well, Mr. Littman, this is the kind of problem that you get into when you go from one criterion laid down by the Supreme Court, namely, the attraction of capital, to another criterion which was also laid down by the Supreme Court, namely, what enterprises have comparable risk or earnings. And from that standpoint, returns generally in time of depression are lower than in times of prosperity. You have two offsetting—

Presiding Examiner: Pardon me.

When you say "returns in time of depression are higher," you mean the rates allowed by regulatory commissions, or do you mean something else?

The Witness: No, I mean amounts generally earned in depression are lower in businesses of comparable risk.

The Supreme Court did not confine itself to one criterion;

it laid down two specific criteria, and there is a third general overall criteria, and these criteria do not necessarily always move in the same direction. In time of depression it costs you more to attract capital. From that point of view, costs are higher.

On the other hand, the returns being earned at that time on enterprises of comparable risk tend to be lower.

Therefore, these two factors have had a movement in a contrary direction, and you must consider and evaluate both of them, according to how I read the Supreme Court decisions in arriving at an overall return.

Presiding Examiner: Keep your voice up, please.

The Witness: Yes, sir.

By Mr. Littman:

Q. You think, then, from your reading of the Court's decisions, that the Court adopted two conflicting criteria? A. No, I did not say that they were conflicting; I said they adopted two criteria which do not always yield the same result; and sometimes one criterion will be moving in a certain direction and another one of the criteria will be moving in another direction.

Q. Well, Dr. Shaffner, if you use the test of earnings-price ratios as the test of attraction, of the cost of attracting capital, then do you not always get the very opposite result than the test laid down by the Court that returns should be

1148

higher in times of prosperity than in times of depression? A. I don't read—

Presiding Examiner: The last part of your question—just a moment—you went a little fast for me, Mr. Littman.

Read the question, please, Mr. Reporter.

(The pending question, as recorded, was read by the reporter.)

Presiding Examiner: Where was that test laid down, Mr. Littman?

Mr. Littman: Well, I am using what this witness says is the test of attracting capital.

Presiding Examiner: No; your question refers to something laid down by the Supreme Court. Are you contending that the Supreme Court laid down such a test or standard?

Mr. Littman: Certainly the Supreme Court said a rate of return, certainly indicated that returns should be higher in times of prosperity than in times of depression.

Presiding Examiner: Will you read me the language from the Supreme Court?

Mr. Littman: Yes.

The Court said, and I quote, at one point:

"A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the

1149

same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties."

And later on, the Court said:

"A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment."

Now, I interrogated the witness, and he had no idea, particularly with the latter statement, as meaning that in times of prosperity, buoyant economic times, the return should be higher and in times of depression the returns would be lower.

Presiding Examiner: Do you agree with that proposition?

Mr. Littman: I think he said so.

The Witness: Well, I don't think the Supreme Court laid down any proposition whatever to the effect that returns should fluctuate with the phases of the business cycle. If that is what you mean—and I rather gather you do—I don't think that was what was stated. It was a rather general proposition that says that things do not always remain forever the same; that is about all it says.

By Mr. Littman:

Q. Well, don't earnings fluctuate, too? A. Oh, yes, they do.

Q. I think you said in your testimony, not only this

1150

morning but also last Friday, that one of the tests that you would apply in fixing the overall rate of return would be the data shown in Exhibit 22, which show the returns earned on average book value of the common shares of 10 natural gas pipeline companies. A. That is right.

Q. And you also have included among your exhibits and in your testimony some references to the earnings of industrial corporations which, of course, are up in times of prosperity and down in times of depression; have you not included those? A. Yes; but I call your attention to a chart on page 87 of the National City Bank Bulletin for August 1959, which shows that from 1948 to 1958, the return on net worth of a large number of manufacturing corporations had declined very significantly during a period of so-called prosperity.

(1150)

Q. And we also followed up with that, did we not, near the end of last Friday's session, and showed that you had not reflected 1959, which is higher than any one of the years that you included in that chart; is that not true? A. 1959 was not reflected because it was not available; but—

Q. It is available now, is it not? A. Yes; but the data that you called my attention to were for the first half of 1959, and we know that the first half of 1959 was considerably better than the latter half because

1151

of the anticipation of the steel strike. I believe it showed earnings up something, some 65 per cent of the first half. The overall figures for the whole of 1959 will be much lower than that and are much lower than that. For the gas companies, I think they are up to some 11 per cent of the returns that have come in.

Q. What is the comparable figure for 1959, comparable to the years that you gave us for 1948 through 1958 which we read into the record here Friday? Do you have it?

Now, this is the figure of return on net worth of the 400 and some-odd industrial companies. A. I don't think I have it with me, but I believe last Thursday's edition of the Commercial and Financial Chronicle had a chart which I suspect represents some advance data—or had a table, rather, which I suspect represents some advance data from the First National City Bank of New York. It is not identified as such.

Presiding Examiner: Mr. Littman, do you have that information?

Mr. Littman: The last information we have is the information which we elicited from this witness on cross-examination that the first half of the year 1959 was some 65 per cent higher than 1958, and we demonstrated by the figures that we read into the record to this witness, which

he accepted, subject to check, that what the witness did was compare the highest

1152

year in the last ten years, namely, 1948, with the lowest year in the ten years, 1958.

Presiding Examiner: Let me ask you there, Dr. Shaffner, do you have the 1959 figures for the full year 1959 in your office?

The Witness: No; they haven't yet been published by the First National City Bank.

Presiding Examiner: Are those figures available in any form?

The Witness: I saw a table in, I believe this last Thursday's issue of the Commercial and Financial Chronicle, which I suspect, from the data they cite, represents some advance information from the First National City Bank; but I do not have it with me.

Presiding Examiner: Can you tell me that there is no actual published information that will show the actual 1959 figures?

The Witness: No, not in final form.

By Mr. Littman:

Q. Well, the last published data that we have, then, shows that the first half of 1959 was some 65 per cent higher than 1958, is that right? A. Mr. Littman, it just occurs to me I have some data published Wednesday, April 6, by Standard & Poor Corporation which is called "1959 Earnings Results by Industries."

1153

Q. Well, just a minute before you get into that.

Talking now about comparable figures, so that we do not get off the track here—we are talking now about the First National City Bank letter, the statistics which you

referred to in your direct testimony and to which I referred in my cross-examination, which are returns on the net worth of some 400 and some odd—just a minute—I'm sorry; I kept saying 400; it is 1800 manufacturing corporations. Is that right? A. Right.

Q. Now, the last published information you have as to those statistics shows, as I think you indicated in your testimony Friday, that the first six months of 1959 in that period, the return on net worth was some 65 per cent higher than indicated for 1958; is that right? A. That is right.

But I will also say to you that the final 1959 figures will be considerably lower, and the Standard & Poor's earnings results for 654 industrials show an increase in 1959 over 1958 of 21.9 per cent.

Q. All right.

Well, and that increase took place notwithstanding the fact that we had a steel strike that lasted—well, it lasted a long time, and certainly practically all of the last half of 1959, did it not?

1154

A. That is right. And steel, 40 steel and iron companies' earnings for 1959 are only up 4.2 per cent as a result.

Q. You do not doubt, do you, in the face of the data that you have before you, that in 1959, all told, is a much better year for industry than 1958? A. Oh, certainly it was a better year.

Q. All right.

Now, the facts are that there is greater employment today than ever before in the history of this country? A. I haven't checked the data recently; if you would say so on the basis of some information you have, I would assume that is reliable information.

Q. And wages are at their all-time peak, are they not? A. I think that is generally true, according to the President's Economic Report.

Q. I will hand you a copy of the Federal Reserve Bulletin for February 1960 and refer you to pages 216 and 217, Doctor. You will find there, will you not—well, suppose you tell me what the gross national product was in 1950? A. According to page 216, it shows $284.6 billion.

Q. And in 1959, what was the gross national product as there shown? A. It is $479.5 billion.

Q. Thank you.

Doctor, I was interested in a statement appearing in your

prepared testimony at the bottom of page 28 and running over onto page 29:

"Second, estimating the future represents forecasting. Many investors do it. Some do it well and others poorly. But no one can really foretell the future and an investor who goes out on a limb and pays a fancy price for some glamour stock, has only himself to blame if the future turns out differently than expected. And the times when investors as a whole seem to be discounting the future a long distance ahead—such as in 1929—and perhaps in 1959—often turn out to lead to periods of disenchantment in which the only investors without regrets are those who based their decisions on solid facts and did not try to look too far into a murky future."

Now, if a regulatory commission uses glamorous stock prices to determine earnings-price ratios and fixes returns for regulated companies on such a basis, who then is to blame if this should result in detriment to the company and ultimately to the consumers? A. Mr. Littman, you start off with a very big "if". This did not seem to me to be an accurate description of what goes on around here, anyhow. I don't know what you are describing, but it

seems a very hypothetical procedure that you are attempting to develop.

Q. Well, as I understood your testimony, I want you

1156

to correct me if my understanding is wrong, Doctor: I understood your testimony the other day to be that weight should be given in arriving at the return for equity basically to two things: (1) the data appearing in your Exhibit 22, which sets forth the return earned on average book value of the common shares of ten natural gas pipeline companies; and (2) to the data given in Exhibit 23, which is headed "Tennessee Gas Transmission Company Earnings-Price Ratios, 1950 to 1959." Do you recall that testimony? A. Yes; and I am afraid I will have to correct that, because I meant to include the earnings-price ratios not only on Tennessee but on all comparable companies in my exhibit; I did not—

Q. Where does that latter information appear; does it appear in your Exhibit 21 some place? A. It appears on pages 36 and 37 of Exhibit 21.

Q. Now, the data shown there, so that the transcript will show it, as well as the exhibit, consists of earnings-price ratios of the natural gas pipeline companies; that is, for ten—is it ten of such companies? A. There are really three series there, Mr. Littman; there is a listed series which runs from 1940 to 1947 and which appears on the top of page 36.

Q. Yes. A. Then there is an unlisted series which runs from

1157

1949 through 1957 and appears at the bottom of page 36. Then there is a new series of the ten stocks which are described in detail in this exhibit and which are shown at the top of page 37 of Exhibit 21 for the period 1953 to date.

And the companies in each of the three series are set forth in the middle of page 37.

Q. Yes; I won't ask you to read the names of those companies, but, just briefly, there are eight natural gas companies listed as being those which are reflected in the listed series; is that right? A. That is right.

Q. And there are six natural gas companies named that are reflected in the unlisted series of earnings-price ratios, is that correct? A. Right.

Q. And ten in the new series? A. Right.

Q. And you say that these data, in addition to the earnings-price ratios of Tennessee, should be considered - A. That is right.

Q. —as one of the important prime factors in determining rate of return?

Now, are any of these natural gas company stocks so-called "glamor stocks"? A. No, sir; I would not describe any of these stocks

1158

as "glamor stocks." I was referring, when I used the word "glamorous" stocks, I was referring to stocks like Thiokol, Texas Instruments, Ampex, some of these electronic and missile stocks that are selling at very high prices in relation to their earnings.

Q. Well, what is the relevance, then, of the last paragraph on page 28 where you talk about glamorous stocks, if you are not talking about natural gas stocks? I just wondered what this had to do with determination or the problem of finding a fair rate of return for Tennessee Gas Transmission Company. A. Well, Mr. Littman, it is relevant in this sense, that glamor stocks represent presumably the kind of stocks where the future is being discounted the furthest in advance; and this represents the situations where the investor can, therefore, go furthest wrong. It merely illustrates the principle that at-

tempting to project earnings in advance is not always successful.

Q. Well, would you say that the stocks of the electric utilities are glamor stocks or not? A. Most of them are not; there may be one or two that could come in that category.

Q. Then do I properly infer from your testimony that your Exhibit 20, which includes the graph that we talked about at some length on the last session on Friday, was not prepared

for the purpose of showing that the natural gas pipeline common stocks were glamor stocks? A. Oh, no, no.

Q. Now, is it your testimony that the natural gas pipeline companies shown in Exhibit 22 are enterprises having corresponding risks to those of Tennessee Gas Transmission Company? A. Generally speaking, I would think they would come about as close to that designation as you could find, as a group.

Q. Now, on page 32 of your prepared testimony, you refer to the testimony of Mr. Zanoff as to minimum bill provisions in Tennessee's rate schedules. Is it not a fact that to the extent that the inclusion of these minimum bill provisions in Tennessee's rate schedules may affect Tennessee's cost of capital, it is already reflected in the cost of capital as shown in the market?

Take, for instance, to be a little more specific, the cost of Tennessee's debt capital, preferred stock capital. Haven't the investors taken that factor into account when they bought our bonds and our common stock and reflected that element; if it is to be reflected, it is already reflected in the prices of the yields; isn't that a fact? A. Well, that is a very interesting point, Mr. Littman; it may, to some extent, be the case, but I would say it would

1160

be one of the factors affecting certainly the supply of capital, and insofar as the price of capital is the result of demand and supply factors, it would enter into it in part. It is a very interesting point; it really is. And I would want to think about it a little bit; I don't think it is wholly wrong, certainly, and there may be an element of weight in it.

Presiding Examiner: Dr. Shaffner, when you say it may affect the supply of capital, what do you mean by that phrase?

The Witness: Well, I mean that if investors are generally aware of this, it affects the willingness on which they will supply capital to the company and the terms on which they would supply it.

You also have demand factors to consider, which is also of equal importance in determining actual rates. But as far as the supply side is concerned, it could have a bearing on it.

By Mr. Littman:

Q. You, I am sure, are aware of the fact that in Tennessee's registration statements and prospectuses reference is made to the minimum bill provision generally, are you not? A. I have the prospectus here. I would assume it would—the prospectus must cover all material information and, insofar as that is material, it would have to include it.

Q. Will you please refer to page 32 of your prepared testimony, and I will read a short paragraph there and ask you

1161

to tell us what you mean by that language:

"In addition, the Examiner and the Commission might also want to consider such aspects of the case as the ratio of common equity to total capitalization. This is a matter

which might be considered as relevant and it is one which the Commission has considered in the past."

What did you have reference to there, Doctor? I am not sure I understand what you are trying to say. A. Well, I believe Mr. Symonds makes a good deal of the point that the rate of return of common equity in the past has varied inversely with the percentage of common equity in the capitalization. And when I said it was one which the Commission has considered in the past, I had in mind particularly the El Paso decision, the opinion in the El Paso case, in Opinion 278, in Docket G-2010, issued November 26, 1954, in which the Commission said, at page 38 of the Opinion:

"The rate of return which we herein allow to El Paso should permit and encourage it to make further improvement in its capital structure. We have observed that the allowance of a similar rate of return to other companies in recent cases has enabled them to issue additional securities as required on most favorable terms."

Q. And what return did the Commission allow on equity in that case?

1162

A. 14.4 per cent.

Q. And what was the ratio of equity to the total capital?

Presiding Examiner: Off the record.

(Discussion off the record.)

Presiding Examiner: On the record.

A. It shows in the footnote on the same page reference to a preliminary prospectus of El Paso, dated November 5, 1954, and it refers to a balance sheet as of July 31, 1954, contained on page 43 of that prospectus which shows El Paso's capitalization at that time was 21 per cent common equity, 12 per cent deferred stock, and 67 per cent debt.

By Mr. Littman:

Q. Then I take it from what you have said, Doctor, what you had reference to, to the quoted portion of your testimony which I just read, was the fact the Commission has over the years allowed higher returns on equity where the equity was thin and progressively lower where the equities were thicker. I may not have stated this too artistically, but is that generally what you had reference to there? A. I had reference to the fact that the Commission had used rate of return as an instrument, so to speak, for effecting improvements in the capitalization of the companies involved in the case in the past.

Q. That is, they have used it as a means of encouraging the company to thicken its equity?

1163

A. Exactly.

Q. Now, at page 20 of your prepared testimony you state that the 1959 year-end book value per share of Tennessee's common stock was 8.6 times the book value figure for 1945, while the average earnings per share for 1957 to 1959 were 3.37 times the average earnings per share for 1945 through 1947. According to my arithmetic, this means that the book value has increased over 2.5 times as much as the increase in earnings per share; is that right, over that period? A. Yes; except that in the case of earnings, I used a three-year period both at the beginning and at the end; I used an average over a three-year period; whereas, in the case of book value, I used specific year-to-year data; so the periods are not exactly comparable but, broadly speaking, that would be true.

Q. I note from your Exhibit 24, if you will please turn to that exhibit now for a while; we are going to discuss it next,—you show the cost of Tennessee's long-term debt, near the center of the page there, of 4.23 per cent and

a return for long-term debt of 2.45 per cent; is that right? A. Yes; that is the result of multiplying 58 per cent times 4.23 per cent.

Q. Have you made a study of the indentures of Tennessee Gas Transmission Company to determine what coverages of interest on long-term debt are required to be maintained by

1164

A. No, sir, I have not.

Q. Is it not a fact that the coverages on interest and sinking funds for long-term debt are an important and necessary factor for the Commission to consider in fixing the rate of return in this proceeding? A. Well, they are factors used by operating agencies such as Moody's in rating stocks, and they are factors used by investment banks in determining what is an appropriate underwriting arrangement for a company which is planning the issuance of new capital. To what extent it is a major factor to be used by commissions in fixing rate of return, I could not say, Mr. Littman.

. . . . . .

1170

A. Well, Mr. Littman, let me call your attention to the fact that the regulations under the Natural Gas Act, pages 20 through 22, approximately, require that the company submit data on its cost of capital. And this data must ultimately come from the company, regardless of whether or not the data are taken from some of the manuals such as Moody's or Standard & Poor's. So, ultimately, the only source of this data must be from the company.

And, therefore, we have taken—we told you what data we wanted, and we have made the best approximation we could of the cost of capital on that basis.

But it is the company's responsibility to provide the

data, and, in any event, ultimately it must come from that source.

So if there are any corrections to be made in the data, we will be glad to do it in accordance with certain broad

1171

principles.

Q. Well, you did request a balance sheet, and it was furnished you? A. That is right.

Q. That is as of February 29, 1960? A. Yes.

Q. And that was furnished to you? A. That is right. And I pointed out it would be to Tennessee's interest to show the latest balance sheet, because it would reflect the issuance of the common stock in February.

Q. Well, at any rate—

Mr. Spalter: I take it—

Mr. Littman: If—maybe this will take care of it.

Mr. Spalter: Excuse me.

Mr. Littman: I don't think we need to hassle about it.

Mr. Spalter: I want the record to note, however, that the balance sheet referred to was furnished about a week before we came into hearing here. It was just at the last moment that we got it.

Mr. Werner: February 29, 1960, was not too far distant away. You do not close your books in one day, though.

• • • • • • • • • • •

1179

Q. Dr. Shaffner, have you presented any information from which the Commission could determine a fair rate of return for Tennessee's well head properties as distinguished from its transmission properties? A. No, sir,

• • • • • • • • • • •

1183

Cross-Examination

By Mr. Freeman:

. . . . . .

Q. Dr. Shaffner, I direct your attention to page 29, column 8, of your Exhibit 21. Taking as a base the average market price of Tennessee's stock in the year 1946 which appears to be the first year available, what would be the percentage increase in 1959 over that base year of 1946? A. Taking the average price?

Q. That is correct, the price listed in column H on page 29 of Exhibit 21. A. About seven hundred percent.

Q. Approximately seven hundred percent increase? A. Yes, sir.

Q. So that if a person invested ten thousand dollars in Tennessee Gas Transmission Company stock in 1946, it would

1184

have been worth approximately eighty thousand dollars in 1959; is that correct? A. Yes, sir.

Q. This is an increase over a thirteen-year period; is that correct? A. There are thirteen year-to-year changes in that period, yes.

Q. So this would be approximately a 53.8 percent increase per year during this thirteen-year period, would it not? A. I will accept your mathematics.

Q. Taking now the average market price of Tennessee Gas Transmission Company stock in 1948 as shown in column H, page 29 of your Exhibit 21, what is the ratio of the 1959 price over the 1948 price? A. It shows an increase of about 375 percent.

Q. The ratio would then be about 4.75 to one; is that correct? A. 4.75, correct.

Q. Do you have before you the computation concerning

these same periods that you made in response to Mr. Littman's questions on Friday afternoon which are shown at transcript page 1062? A. I have them, but not before me.

Q. How do the respective ratios for the industrials

1185

in the other regulated industries for the period 1959 over 1948 compare with the ratios you have just computed for Tennessee Gas Transmission Company? A. Well, Tennessee—the increase between 1948 and 1959?

Q. Yes. A. Well, the 3.75 direct increase.

Presiding Examiner: Off the record.

(Off the record.)

Presiding Examiner: Back on the record.

Would you read Mr. Freeman's last question.

(The last question, as recorded, was read by the reporter.)

Presiding Examiner: Mr. Freeman, will you make clear to us what type of comparison you want?

Mr. Freeman: I would just like Dr. Shaffner to compare the ratios for the respective years I mentioned that he computed in response to Mr. Littman's questions at page 1062 of the transcript with the ratio of Tennessee Gas Transmission Company, which it just computed for the same period in response to my question.

Presiding Examiner: In other words, you don't want the percentage of increase, what you want is the number of times by which it increased from the earlier figure?

Mr. Freeman: That is right.

The Witness: Well, Tennessee would show 475 percent, or

1186

4.75 times, which compares with the natural gas pipelines as being about 181 percent of the figure for natural gas

pipelines for industrials, which would be about eighteen percent better, according to my calculations.

By Mr. Freeman:

Q. Excuse me, Dr. Shaffner. The ratio for the industrials was 4.0; is that correct? A. That is right.

Q. And the ratio for Tennessee Gas Transmission Company is 4.75? A. That is correct. And 475 divided by four is approximately 181 plus percent.

Q. Thank you. As compared with the electric utility industry. A. It would be about a 185 percent of the figure for the electric utility industry.

Q. And the ratio is also appreciably greater than that for the railroads and the telephone and telegraph industries; is that correct? A. Yes, sir.

Q. Now, Dr. Shaffner, referring still to Exhibit 21, page 29, column H, and using the average market price of Tennessee Gas Transmission Company's stock in 1953 as a base, what is the ratio of the average market price of the stock for 1959 over 1953?

1187

A. It is 234 percent, approximately.

Q. This compares with a ratio of 1.83 for the electric utility industry, does it not, for the same period 1959 over 1953?

Presiding Examiner: You are simply referring to the testimony at pages 262 to 1063?

Mr. Freeman: It speaks for itself, I presume.

The Witness: Yes, sir.

By Mr. Freeman:

Q. Dr. Shaffner, turning now to page 13 of your direct testimony, you refer to a chart and supporting data on pages 1 and 2 of your Exhibit 21, which gives the yields on U. S. Government long-term bonds, and you testified that

this chart indicates "the direction and extent of the trend in the movement of interest rates".

I note that the chart on page 1 of your Exhibit 21 ends with January 1960. If you were to extend that chart from January 1960 through March 1960, what would be its direction? A. It will be generally downward.

Q. Hasn't the average yield on long-term U. S. bonds dropped to approximately four percent by the end of March from the figure of 4.37 percent at the beginning of the year? A. Yes, in fact Moody's bond survey for April 1960 at page 614 records that the yield on three U. S. Government bonds averaging twelve years and six months to maturity

1188

was 4.2 percent on March 31.

Q. So that the extent of this movement in the past three months has been rather sharply downward, has it not? A. Yes, sir.

. . . . . .

1189

Cross-Examination

By Mr. Plaine:

Q. If you will refer to page 26 of your prepared testimony, Dr. Shaffner, the first full answer on that page indicates, among other things, that the largest market for bonds is with institutional investors, many of whom are restricted by law or applicable regulations to investment in bonds or to a certain prescribed maximum in common stocks.

Is it also true that many institutional investors are limited in the kinds of bonds they may invest in, such as those which represent regulated utilities as distinct from nonregulated business? A. Well, the publication of a so-

called legal list by each state and the District of Columbia, which gives the list of the securities that are legal for investment by fiduciaries and certain other institutional investors, has somewhat this effect, because it specifically states those securities for which it is legal to invest such funds, and

1190

legalists tend to include a good many issues of regulated companies.

Q. I would assume, then, that this does present to companies like Tennessee a sort of built-in advantage in attracting capital. A. Since it is a regulated company.

Mr. Werner: May I have that question read back, please?

Presiding Examiner: Read the question.

(The last question, as recorded, was read by the reporter.)

Mr. Werner: I have no objection to the question, except I would like to know what Mr. Plaine means by advantage.

Presiding Examiner: Could we put it this way, Mr. Plaine, that Tennessee admittedly is a regulated company, and therefore it falls within the group that has been referred to as being on the legal list for fiduciaries.

Mr. Plaine: I suppose the question answers itself.

By Mr. Plaine:

Q. In the testimony of Mr. Katzenbach for Tennessee, he indicated in Exhibit 14 a gradual decline of debt coverage ratios. On cross-examination he conceded that this was not atypical or atypical for Tennessee, that it was pretty generally true with respect to most of the natural gas pipeline companies. So I assume you agree with that. A. I think probably that situation is broadly true for

1191

this industry.

Q. Would you say that this general downward trend has jeopardized the sale of bonds by the natural gas pipeline companies or created any difficulty in the sale of their common stock to investors? A. It has, as far as I can tell, not created any specific difficulties. It does tend to have an effect upon the ratings of the securities and upon the cost at which they sell. And that is one explanation, I think, of why the debt cost of natural gas pipelines are generally higher than those of the more conservatively financed electric utilities.

Q. Of course, those rating have also been more or less constant, have they not, in the same period? A. Tennessee's rating's actually have been proved.

• • • • • • • • • • •

1192

Redirect Examination

By Mr. Spalter:

Q. Dr. Shaffner, do you remember being cross-examined by Mr. Littman with respect to the higher cost of Tennessee's debt and stock as against the prevailing yields at the time of issue of Tennessee's securities? A. Yes.

Q. Would you say, Dr. Shaffner, that it is a normal proposition and that a security at time of issue will bear a higher cost than the yields on outstanding issues? A. Mr. Spalter, this is a fact which I don't believe is too widely known, but in time of rising interest rates, the cost of newly issued securities tends to rise above and keep ahead of the cost of bonds of the same quality ratings. When interest rates are in a down trend, the contrary situation seems to prevail. And I might make reference in this connection to a chart of the subject published in Moody's bond survey of December 7, 1959, page 140, which

shows from 1955 through 1959 to the date of publication the yields on corporate bonds of four investment quality ratings from AAA through BAA, compared with the yield at the same time prevailing on already outstanding securities with the same rating. And it shows quite clearly that when interest rates are in an up trend, the cost of newly issued securities tends to go ahead of the prevailing rates, whatever they are.

1193

When interest rates are in a down trend, as they were in early 1958, the yields or costs of newly rated securities tends to come down close to the level of yields on already issued securities, and in some cases even drops below.

So this is a general characteristic of the costs of newly issued securities. And it applies to preferred stocks, corporate bonds, and even to government bonds.

Mr. Spalter: That is all the redirect we have, Mr. Examiner.

Recross-Examination

By Mr. Littman:

Q. Dr. Shaffner, I think Mr. Freeman elicited from you on his examination that Tennessee's common stock had increased about seven hundred percent since 1945. Do you remember that? A. I believe it was from 1946, I think that was the amount.

Q. Beginning in 1946. What was the starting year that you reflected in that seven hundred percent figure for 1945 or 1946? A. There is no price data shown for 1945, Mr. Littman, so it would have to be 1946.

Q. Now, when did Tennessee—what year was the first full year of Tennessee's operations as a natural gas pipeline company?

1194

A. Well, the description of the company at the top of page 29 says:

"Tennessee Gas Transmission Company, organized in 1947, succeeded Tennessee Gas and Transmission Company in business since 1944."

Q. My question was, when was the first full year of operation for Tennessee. Actually, I think it started to deliver gas in the fall of 1944, but its first full year of operation as shown—well, the first year shown here is 1945; isn't that right? A. I think that is about right.

Q. When you started to make this seven hundred percent projection you really were starting with a very small infant, weren't you, and going from the day that the infant was either crawling or just learning how to walk, that is how you got your seven hundred percent? A. That is right.

Q. Mr. Freeman asked you to make this comparison—I am not going to say you started this—and then he asked you to compare that seven hundred percent with what happened to six natural gas companies between a base period of 1941-43 through 1959 as reflected in your Exhibit 20; isn't that what he asked you to do? A. I believe so.

Q. Now, then, you will recall that the natural gas

1195

pipeline companies reflected in Exhibit 20 were six in number, namely, El Paso, Mississippi River Fuel, Northern Natural, Panhandle, Southern, and United Gas. Do you remember those six companies that were used by Standard and Poor's in the basic data for Exhibit 1? A. Yes.

Q. They were certainly not infants during their base period from 1941 to 1943, were they?

For instance, Panhandle, whom I happen to represent,

had been in business since 1931; isn't that right? A. Panhandle is quite an old company as natural gas pipelines go.

Q. An even older one than that would be the United Gas Pipeline Company, that has been operating in the South for many, many years, hasn't it?

Mr. Spalter: Mr. Examiner, I think this is more a question of argument to be made in the brief rather than eliciting here the age of the companies.

Presiding Examiner: I will permit it.

By Mr. Littman:

Q. Well, you know, don't you, that United Gas Pipeline Company is an old established company? A. Yes.

Q. And has been operating for many years prior to the 1941-1943 base period?

A. Yes.

Q. I won't go into the others, of course you know all the others, namely, El Paso, Mississippi River Fuel and Northern Natural, had all had substantial periods of operation, perhaps with the exception of Mississippi River Fuel, prior to the 1941-43 base period; isn't that true, sir?

Maybe I stand corrected on Mississippi River Fuel; I see it was incorporated back in 1928 according to your exhibit. A. Yes. But I was thinking of Texas Eeastern. Texas Eastern was organized in 1947.

Q. Texas Eastern is not in Standard's and Poor's six companies reflected in Exhibit 21. A. You are right.

Q. It wouldn't be fair, would it, Dr. Shaffner, to compare the growth in height of a person between the time he was born and the time he reached twenty years of age with the growth of a person starting with his tenth year and running until he was thirty years of age, would it? It wouldn't be a valid comparison? A. Well, you would be pretty sure of what the results would be.

Q. Just one further thing in that regard.

According to the 1959 annual report of Tennessee Gas Transmission Company to its stockholders, a copy of which you

1197

have before you, I am sure, you will note the next to the last two pages contain data as to the company growth record. Is it a fact that as of December 31, 1945 as there shown, Tennessee had a capacity of two hundred thousand Mcf. per day? A. Yes, sir.

Q. And what was the capacity as there shown as of the end of 1959? A. 2,505,000.

Q. And what is the ratio of growth there of Tennessee? A. The 1959 figure is twelve and a half times the 1945 figure, so your increase would be 1150 percent.

Q. Just one or two questions with regard to the consolidated balance sheet approach to the rate of return problem.

As you recall, we had established quite clearly that Exhibit 24 shows the consolidated capitalization of Tennessee as of February 29, 1960, and I recall that you stated in your further examination here recently that you recommend that the Commission use the consolidated capitalization shown in Exhibit 24 for the purposes of fixing the rate of return for Tennessee Gas Transmission Company in this proceeding, which is of course related solely to the jurisdictional operations; is that correct? A. Yes, sir.

Q. I am sure you are aware of the fact that Tennessee Gas Transmission Company, or I should say certain of its

1198

subsidiaries, rather, are engaged in extensive oil drilling operations, some of it in the Argentine. Do you remember that testimony of Gardiner Symonds? A. Yes, sir.

Q. Do you know they are engaged in drilling for oil in Africa? A. Yes, sir.

Q. And of course you know about these other enterprises

such as a parking garage called 1010 Travis and the Tenbarco Company, which is an oil barge company. You are familiar with that? A. Yes, sir.

Q. You know they engage in refining and they have gasoline stations in certain parts of the country and all that sort of thing?

Now, it is your question that in computing rate of return of jurisdictional operations of Tennessee that the consolidated capitalization of the company which reflects all of these numerous ventures of Tennessee should be used? A. That is exactly my testimony, Mr. Littman.

Q. All right, I just wanted to make sure.

Now, let's get the full dimension of what you are saying. Now, this consolidated balance sheet approach would reflect the cost of debt to the East Tennessee Natural Gas Company, wouldn't it?

A. Yes, sir.

Q. And it would also reflect the cost of debt to the Midwestern Gas Transmission Company? A. Yes, sir.

Q. Do you think that the jurisdictional customer of Tennessee Gas Transmission Company should have their rate of return based on the cost of debt to these other companies such as Midwestern and East Tennessee; is that your testimony? A. My testimony is that when you are considering an enterprise of this character and this magnitude, you have got to take the over-all picture, which is what the investor does, and the only way you can do that is to use a consolidated balance sheet.

Q. Is your answer to my question yes, then? A. If it follows from that, my answer would be yes.

Q. Does it follow from my question? A. I am saying that you use the over-all consolidated capitalization to determine the cost of capital.

. . . . . .

1202

Louis Zanoff

was called as a witness and, after being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Spalter:

. . . . . .

1205

(2)

Q. Mr. Zanoff, has Exhibit No. 25 been prepared by you or under your supervision? A. Yes.

Q. Please give a brief description of source of data contained in Exhibit 25. A. The data are from Tennessee's Exhibit 5 in this proceeding, its rate increase application and tariff involved in this proceeding, certain rate schedules in addition to those contained in such tariff, and its service agreements.

Q. Please give a brief description of the exhibit and the purpose thereof. A. As the title of the exhibit indicates, it contains a comparison of revenues that would be realized by the company under the minimum bill provisions of its rate schedules with the total revenue the company has estimated it would receive for services under such rate schedules.

Line 1 of the exhibit shows that the company has

1206

estimated revenues from jurisdictional pipeline sale and transportation of gas totaling $289,093,834 for the test year.

Line 2 shows that it would obtain a total of $200,825,137 under the applicable minimum bill provisions.

Line 3 shows that the minimum bill revenue represents 69.5 percent of the total estimated revenue for tariff sales.

Thus, for the test year, the company is guaranteed 69.5 percent of its jurisdictional revenue.

(3)

Q. Is the amount shown on line 2 the rock-bottom minimum revenue which the company can expect through rendition of service? A. No. As I have stated, the revenue shown on line 2 results from application of rate schedule minimum bill provisions. You will note that several of the company's rate schedules have no minimum bills at all, for some of the sales the minimum bill is the demand charge only and for some of the sales the minimum bill contains a minimum volumetric take-or-pay-for obligation. At least in the case of services under schedules without minimum bill provisions and those where minimum bill is the demand charge, actual deliveries will produce commodity revenue not included in line 2.

Further, Tennessee makes jurisdictional sales in addition to those included in the exhibit. Such sales are

identified in Tennessee's Exhibit 5 as jurisdictional industrial, and sales to other utilities from production system and from manufacturing system. Such sales are made under rate schedules which generally contain relatively high minimum take-or-pay-for provisions. If these sales and the guaranteed revenues under such sales were included in my exhibit, I believe the percentage of minimum revenues would be further increased.

Q. What relation, if any, is there between your Exhibit 25 and those of Dr. Shaffner on rate of return?

(4)

A. One of the important elements to be considered in establishing a reasonable rate of return is the risk involved

in obtaining revenues to cover the indicated costs of a particular company.

My Exhibit 25 shows that Tennessee is guaranteed certain minimum revenues under its tariff rate schedules, indicating a relatively low risk element in connection with recovery of its cost of service.

. . . . . .

1235

Mr. Reeder: I would say that that does not remove the ground of my objection, for the reason that if the Examiner would overrule my objection, it would be necessary for each and every one of the parties who do not agree with Tennessee's calculation to put in testimony upon his own calculation method. And since, by reason of your Honor's ruling, no one has had an opportunity to bring his allocation testimony down to date, or to cross-examine Tennessee on their allocation, and since we supposed that we were awaiting your Honor's decision in G11980 before going further——

Presiding Examiner: That situation has not changed, Mr. Reeder, because I want to state firmly that I don't see anything at all in Exhibit 26 which requires the parties to bring in evidence on their allocation methods any more than was required by Tennessee's presentation of the cost of service exhibit which distributed among the zones on its system its claimed cost based on its own method of allocating between zones. And I am going to rule without further discussion that I don't feel——

1236

Mr. Smith: Mr. Examiner, just a moment.

I think as a party, representing a party with a substantial interest, that I should be heard. And I know I always get into these arguments after they have been decided, and I object to cutting off the right to be heard.

Presiding Examiner: Mr. Smith, you arrived late on the scene. You must understand the amicable nature of the proceeding.

Go ahead and state your position.

Mr. Smith: I want first to join with Mr. Reeder in his motion, and I am not going to argue to any great extent, because I understand your Honor's ruling that down the road this month we will then have a full argument on all aspects as to whether the interim order shall issue. My sole argument to be made at this stage is this: The Examiner at page 302 of the transcript ruled specifically that the parties could not bring in cost allocation methods according to their ideas of what is right and proper.

Now, in the light of that ruling, and in the light of your examiners' ruling of setting certain specific issues to be tried at certain dates during this month and the next, the Columbia Gas System Companies, for one, have not seen fit to work up or study and investigate the books of Tennessee to come in with their idea of what the cost allocation should be in the event that the Commission adopts the interim order

1237

procedure and translates in the rates a reduced cost of service.

Now, very simply, we are put in this very serious prejudicial position, whereas we have been prevented by the rulings thus far from even considering the cost allocation issue, we have gone forward in full acquiescence to that ruling, and now we are faced with the staff and the Tennessee methods of cost allocation, and we will have been denied our right of putting in rebuttal evidence on that issue, so that if the rates are rolled back, then our position, which we have been fighting for for many years now and have spent a great deal of money on, we will have had that cut out from under us.

Now, it is not so simple as your Honor thinks, that there

is just a mathematical computation back of it. Here we are on April 5, we started paying these high rates. Now, theoretically, unless Tennessee comes in for a higher filing, that could cover the complete twenty years of the contract between the parties. That is a greater threat than the loss of the revenues that we have been paying through the refund periods up to the effectiveness of these G-19983 rates. And for that reason, your Honor, I think it is highly prejudicial to permit this evidence to go into the record at this point and force cross-examination while at the same time having cut off the parties from putting in rebuttal evidence on the

1238

cost allocation.

Presiding Examiner: I am not going to hear any more about it, gentlemen. I want to make my position perfectly clear.

When we come to the end of the examination of all the witnesses, including Tennessee rebuttal witnesses on the rate of return issue, the staff has indicated that it intends at that time to make a motion to have an interim decision on the issue of rate of return. And as I stated a moment ago, if that occurs, I would promptly certify such a motion to the Commission for its consideration and action.

Now, there is no purpose whatsoever in even talking—well, first I will preface my remarks by saying that I am not making any comment whatsoever at this time as to whether I am in favor of having an interim decision on rate of return or not, the Commission will make that decision. But it seems to me that there is no purpose whatsoever in even considering an interim decision on rate of return unless such an interim decision would result in and would be accompanied by an interim partial refund to the customers on the Tennessee system.

Now, it seems to me that it is beyond dispute that there couldn't possibly be any interim refund to the Tennessee

customers based on an interim decision on rate of return, unless the interim decision were based on some method of distributing costs between the zones on the Tennessee system.

1239

The whole theory of the staff approach in requesting an interim decision on rate of return, which has now been spread on the record many times in this proceeding, is that in connection with such a motion the staff would recommend that the Commission, for the purpose only of an interim decision on rate of return, should accept for that limited purpose all the other facets of the Tennessee cost of service. That would include the Tennessee position on all the other components of its cost of service rather than rate of return and related income taxes.

It would, similarly, for the same purpose, include and reflect—but only for that purpose—the same method of distributing your jurisdictional costs between zones which Tennessee has employed in this rate filing in this proceeding.

Now, I recognize that those parties who opposed the use of an interim decision for rate of return in this proceeding will want to argue, and you will have the full opportunity to argue before this second phase of the hearing is concluded. They will want to argue that the result of such an interim decision might well be to do serious injury to certain customer areas on the Tennessee system if there should ultimately be a change in the method for distributing costs between the Tennessee zones from that proposed by Tennessee in this proceeding.

That argument, in my opinion, has nothing to do with the

1240

point we are discussing now. And for the reasons which I have stated, I am going to overrule the objections.

Will you go ahead now, Mr. Spalter?

Mr. Reeder: Mr. Examiner, may I ask one question there for information?

I notice that in both your Honor's ruling and in the statement of staff counsel you referred to this proposed interim decision as involving refunds. May I inquire whether the idea of including in the interim decision not only findings but refunds as a rate reduction, which I understand was in the original staff proposal, has now been reduced to including only findings and a refund order, eliminating the proposed motion for an interim rate reduction?

Presiding Examiner: I wasn't addressing myself to that at all. I assumed the staff motion would include the latter, too. If there should be a finding by the Commission cutting down the rate of return, I take it the staff's motion will include—I will ask you, Mr. Spalter.

Mr. Spalter: Yes, you are right as you go, Mr. Examiner, if there is a reduction in the over-all cost of service, and if there is to be a refund for a past period, there would also be a direction to the company to establish lower rates for the future after the refund period. It follows.

Mr. Reeder: I presume, then, that your Honor's ruling is not intended to preclude any of the parties from offering

1241

such evidence as they choose as to how any refunds or rate reduction which the staff might contemplate should be allocated.

Presiding Examiner: No, I want to make it perfectly clear, Mr. Redder, that you misunderstood me. I want to make it as clear as I can that I don't intend at this stage of the proceeding to allow any of the parties to go into the question as to methods of zone allocation, and I don't intend to permit that either in cross-examination of Mr. Chin or through the presentation of evidence by the intervenors.

. . . . . .

1302

Prepared Testimony of Ross M. Robertson

(1)

Q. Will you state your name please? A. Ross M. Robertson.

Q. What is your address? A. 1008 South Highland Avenue, Bloomington, Indiana.

Q. What is your present occupation? A. I am professor of business economics and public policy, School of Business, Indiana University, and I am also director of business history studies there.

Q. What academic positions have you held? A. From 1937 to 1940 I was instructor in economics at the University of Kansas. From 1940 to 1942 I was instructor in English and Dean of Georgia Military Academy, College Park, Georgia. After the war, I was instructor in economics at the University of Kansas from 1946 to 1948, when I received my Ph.D. at that institution. From 1946 to 1953 I was successively assistant professor of finance, associate professor of finance, and associate professor of economics at the University of Tennessee, Knoxville, Tennessee. In 1957 I joined the faculty of Indiana University, where I am presently located.

Q. Have you had professional experience other than university teaching? A. Yes. In 1942 I served as an economist for the

1303

(2)

U. S. Department of Commerce and the Board of Economic Warfare. In December of that year I entered the U. S. Navy, and I served as an officer of the Supply Corps until early 1946. I left the Navy as a lieutenant and am presently a lieutenant commander in the Naval Reserve.

In 1953 I left the University of Tennessee to become financial economist for the Federal Reserve Bank of St. Louis. In that capacity I engaged in economic research for the Bank and System committees, and I served as advisor to the President and Board of Directors of that Federal Reserve Bank, working intensively on analysis of the money and capital markets. I was at the Bank from 1953 to 1957, when, as I said, I joined the faculty of Indiana University.

Q. Do you presently have any connections with the business and financial world other than in your work of teaching and research? A. Yes, I frequently consult with private and public agencies on economic and financial problems. For example, I am presently retained as economic consultant to the Mississippi Industrial Research Center, Jackson, Mississippi, to aid the efforts of that agency in improving the rate of growth of the state of Mississippi.

Not long ago I completed a job as consultant to the U. S. Savings and Loan League on questions involving management of the public debt. I am presently working on two assignments

from the CED Commission on Money and Credit. I am a regular participant in national professional meetings, and I am frequently invited to speak to business and financial organizations throughout the Midwest such as the Illinois Bankers' Association, Missouri Bankers' Association, American Savings and Loan Institute, Kansas State Chamber of Commerce, and so on. Each summer I teach the course

in international finance at the Central States School of Banking in Madison, Wisconsin.

Q. Have you testified as an expert witness before any regulatory commission or court in a utility rate case? A. I have testified in four cases before the Indiana Public Service Commission and in two cases before the Public Service Commission of West Virginia. I have appeared as a witness in a hearing before the Board of Governors of the Federal Reserve System.

Q. Have you any publications in the field of economics and finance? A. Yes, I write almost continuously and have many articles and papers published in economic journals and national periodicals. In 1955 my book, "History of the American Economy," was published by Harcourt, Brace and Co.; it is presently being revised for publication of a second edition next year. I am currently writing a book in monetary

and debt management policy that will be published in 1961.

Q. Are you a member or officer of professional associations? A. Yes, I am a member of the American Economic Association, American Finance Association, the Economic History Association, and the American Association of University Professors. I am presently senior director of the Indiana Academy of the Social Sciences and a trustee of the Business History Foundation, Inc., Cambridge, Massachusetts.

Q. In your teaching do you deal frequently with problems of public utility rate making? A. I do indeed. One of the most important problems in the general area of public policy toward business is the problem of public utility rate making. At both undergraduate and graduate levels

of instruction I have repeatedly taught this subject, and it is imperative that I keep up with the latest thought and writing in this field.

Q. Professor Robertson, have you been consulted by Mr. Robert Stewart, Counsel for the Public Service Commission of West Virginia, in connection with this case? A. Yes.

Q. For what purpose? A. I have been asked to give my opinion regarding the

cost of capital and a proper rate of return to the Tennessee Gas Transmission Company.

Q. Will you indicate the scope of your testimony? A. Yes. I intend to testify that, although the cost of capital to the Tennessee Gas Transmission Company in particular and to public utilities generally has doubtless risen in recent years, the increase has not been as great as suggested by Mr. Symonds or Mr. Katzenbach. Although it is quite true that the cost of debt capital has risen substantially since the mid-1950's, it is equally true that the cost of equity capital has fallen. Moreover, it is by no means certain, as implied by Mr. Symonds, that so-called tight money has become a permanent part of the economy. Finally, I intend to testify that to reckon accurately the cost of capital to a company it is necessary to base one's computations on figures taken from the market place.

Q. Have you made a study of the cost of capital to the Tennessee Gas Transmission Company? A. Yes. I have carefully read the testimony of Mr. Gardiner Symonds,

Chairman of the Board and President of Tennessee Gas Transmission Company, and of Mr. L. Emery Katzenbach, II, a general partner of White, Weld and Company, 20 Broad Street, New York, New York. I have made a computation of the cost

of capital to the Tennessee Gas Transmission Company, following as nearly as I can methods commonly used by authorities and practitioners in this field.

Q. Do the results of your calculations coincide with those of Messrs. Symonds and Katzenbach? A. No, they most emphatically do not. As will appear presently, I am in no substantial disagreement with the witnesses for the company with respect to the cost of debt capital and with respect to the cost of capital raised by selling preferred stock. However, for reasons that I shall try to make clear, I feel that company witnesses have reckoned the cost of equity capital too high. I therefore conclude that the rate of return prayed for by the company is likewise too high.

. . . . . .

Q. Professor Robertson, how have you proceeded to compute the cost of

(7)

common stock capital for this company? A. I have proceeded in the manner I customarily use and in the manner overwhelmingly endorsed by experts in this field. That is, I have relied on the market's estimation of the yield required to attract equity investors to the company. Mr. Symonds has arrived at his figure by "deriving" it, to use his expression, after assuming first a 6 per cent overall rate of return and then a 7 per cent overall rate of return. Thus, his figure is a residual, arrived at by a simple process of subtraction after making certain hypothetical assumptions about the allowable rate of return. I cannot stress too much the requirement that when reckoning the cost of capital one must consider current market opinion

as reflected in prices of previously issued securities of a company. For this reason I have based my estimate of the cost of common-stock money on the rates of return sufficient to cause stockholders to

1310

invest in the common equity of the Tennessee Gas Transmission Company.

Q. For what period have you estimated the cost of common-stock money to the company? A. The number of shares of the company's stock outstanding has increased rapidly during the 1950's; some of this stock has been issued through conversion of the preferred, and some of it has been issued through common-stock offering to the public. In 1953 there was a large offering of the common stock of the Tennessee Gas Transmission Company, and I have used that offering as a basis for determining the cost of equity capital in the early and middle 1950's.

In 1953, dividends on the common stock of the company were

(8)

$1.40 per share. As of May 5, 1953, an offering of the common stock of the company was made at a price of $22.75. During the month preceding this offering, i. e., from April 6, to May 4, 1953, the average closing price of this stock was $24.31. Thus, the average yield of the stock during this month was 5.76 per cent.

Q. Does 5.76 per cent represent the cost of common capital to the company as of that date? A. By no means. Two adjustments must be made. In the first place, some allowance must be made for the cost of

1311

selling a new stock issue. This I have done by computing the dividend cost of the offering on May 5, 1953. The pro-

ceeds of this issue to the company were $21.25 per share, the dividend cost of the new offering being $1.40 divided by $21.25 or 6.59 per cent. The ratio of the dividend cost of the May 5 issue to the average yield of the common during the month preceding that date was 114.40 per cent. Multiplying this factor of 1.1440 by 5.76 per cent, we of course get 6.59 per cent.

Next, it is necessary to take into account a margin of earnings applicable to common stock over and above the amount required for dividend payments. This margin must be sufficient to protect common-stock investors against a reduction in earnings that, particularly during a period of economic recession, might impair the ability of the issuer to pay the established rate of dividend. More important, this margin of earnings enables the company to obtain a part of its funds for expansion from profits. Just how large the margin should be is a matter of judgment, and judgments will vary from one time to another and from one company's financial

structure to another.

One empirical test of the adequacy of any company's earnings margin for its common stock is whether the investing public is willing to pay for stock at such a price, and on

such a yield basis, as to evidence confidence in the ability of the company to continue the established rate of dividend. If the public will pay such a price, then whatever earnings margin exists is apparently adequate. Another way of judging how large the margin of earnings should be is to consider the payout ratio of a group of similarly situated companies.

In 1953 the payout ratio of the company was, according to my calculation, 82.5 per cent of earnings. If we take the reciprocal of 82.5, we see that the company should have earnings equal to 1.2121 times the amount required for common stock dividends. Multiplying 6.59 per cent by 1.2121 we get 7.99 per cent. This, I should say, was the maximum allowable rate to the common stock of the Tennessee Gas Transmission Company in 1953.

Q. What, then, do you consider a fair estimate of the cost of capital to the company? A. In the summary of my exhibit I have estimated the cost of capital on both a "historic" and "current" basis. Taking 7.99 as the "historic"—meaning 1953—cost of equity capital and taking the figures previously given—4.20 and 4.09, respectively—for the cost of debt and preferred-stock capital, I obtained a weighted figure of 5.01 per cent. In making this computation I have taken an average of the capital-structure ratios of the company for the years 1953 to 1959, inclusive.

1313

(10).

It would not be fair to the company to determine the cost of capital entirely on the basis of a previous period. Therefore, in the summary of my exhibit I have also computed a "current" figure. From Moody's "Bond Survey", dated February 1, 1960, page 740, I observe that A-rated public utility bonds, newly issued, were yielding 5.30 per cent. To this figure we must, of course, apply a factor to include cost of issuance, and I compute this figure to be 1.01 (see Computation 5). Applying this factor of 1.01 to take care of the cost of issuing securities, the result is 5.35 per cent, in my estimation a fair rate for raising new debt capital by a company with the rating and reputation of the Tennessee Gas Transmission Company. As

shown in my Computation i, I have estimated the current cost of preferred-stock capital at 5.65 per cent.

Finally, I have computed the current cost of common capital to be 6.53 per cent. The average closing price of this stock during the four-week period January 18, 1960, to February 12, 1960, was $34,9125 (See Computation 8). On the basis of this year's indicated dividend of $1.40, the average yield of this stock during the four-week period preceding the public offering was 4.01 per cent, and applying the ratio of 114.40 per cent, computed on the basis of the 1953 experience, to allow for the cost of issuance, we obtain a current dividend cost of issuance of 4.58 per cent. I reckon the

company's 1959 payout ratio to be 70.1 per cent, or just a little higher than the average of Public Utilities Fortnightly's pipe line and integrated system group. Taking the reciprocal of this figure, 1.4265, and multiplying it

by 4.58 per cent, we get 6.53 per cent. I would like to underscore the fact that I have made my cost-of-issuance adjustment using the relatively high 1953 figure rather than a considerably lower estimated figure for the current 1,600,000 share offering of the Tennessee Gas Transmission Company.

You will observe that in computing the current cost of capital to the company I have taken my weights from the capital structure ratios as given by the company's consolidated balance sheet of December 31, 1959, found on page 29 of the Prospectus (dated February 15, 1960) of the company's recent common-stock offering. In computing the total capitalization and the capital-structure ratios of the company, I have omitted from the debt category "notes payable to banks."

I thus arrive at a current cost of capital to the company of 5.70 per cent. Obviously, this figure gives no weight to the imbedded capital costs. The average of the "historic" cost of capital and the "current" cost is 5.355 per cent.

Q. Professor Robertson, would you say that 5.355 per cent represents a fair cost of the capital presently invested in the Tennessee Gas Transmission Company?

1315

A. I so testify. I have tried to be as liberal as possible in arriving at these figures, and I have made no effort to reduce my final figure by means which, according to a good many authorities, would be considered legitimate. For example, in computing the imbedded cost of debt capital, I have not included as an offset to interest on long-term debt the considerable item "interest charged to construction." More important, I have not reckoned the interest

(12)

cost of capital after Federal income tax. Since interest is counted as an expense, this company saves on Federal income tax by an amount equal to about half of its interest outlays.

Q. In your opinion, is a 6 per cent overall rate of return sufficient, in the light of your testimony concerning the cost of capital, to enable this company to pay the going rate of return to its securities holders and in addition to permit annual additions to surplus that are normal for the industry? A. It is my judgment that a 6 per cent overall rate of return will, for the foreseeable future, enable this company to maintain its financial integrity and that a 7 per cent rate would provide revenues in excess of those required to maintain such integrity.

Q. Professor Robertson, do you concur in the view of

1316

Gas Transmission Company, that the "pure cost of money" has risen in the past few years? A. I most emphatically do not. The only meaningful statement that can be made about money or capital costs during the past few years is that the cost of debt capital has risen and the cost of equity capital has fallen. Indeed, it is of more than passing interest that, expressed as average yields, the cost of debt capital has risen since 1950 by about the same amount as the cost of equity capital has fallen. Referring to Moody's averages, which Mr. Symonds has quoted freely, we find that the average yield on the stocks of Moody's twenty-four public utilities averaged 5.66 in 1950. The average rose to 5.77 in 1951 and has since declined each year to an average of 3.97 in 1959, a drop of 1.69 points.

(13)

In the meantime, the average yield on bonds rated "A" by Moody's rose from 2.79 to 4.78, or a difference of 1.99.

Q. Do you agree with Mr. Symonds that the "compensation for common stock capital consists of two elements, namely, cost of money, sometimes called the pure cost of money and reward for risk"? A. No, I do not. I never heard of such a doctrine, and I can testify that such a notion certainly does not have current acceptance among economists. The return to equity

1316-A

is simply a return for venturing, for taking risks. The return for the use of borrowed funds is called interest, and while interest includes a return for waiting as well as a return for risk, it is an altogether different concept from that of return to equity.

Q. Would you say that the risk involved to the stockholders of the Tennessee Gas Transmission Company has decreased during the 1950's? A. It should be apparent to anyone familiar with the facts of this company's growth and with the facts of the growth of the entire gas industry that risks, for the Tennessee Gas Transmission Company have steadily decreased during the past ten years. This is no longer a struggling company; it is now one of the giants of the industry.

Moreover, the economic climate that has led to a rise in the cost of borrowed funds—i. e., to a rise in the rate of interest—has been a salubrious one for industry generally and for public utilities in particular. The growth of the public utility industry since World War II has been phenomenal; so much so that the Federal Reserve Board, in large part for this reason, has recently revised its Index of Industrial Production. On a basis of 1947-49 equal

to 100, total industrial production in this country stood at 141 in 1958, down considerably from the record highs of 151

in 1956 and 152 in 1957. The mining index stood at 120 in the same year, down greatly from the highs of 132 in each of the years 1956 and 1957. But the index of output of electric and gas utilities stood at 244 in 1958, an all-time record and eleven points higher than the index of 233 in 1957. (The foregoing data are from the Federal Reserve Bulletin, December, 1959, p. 1469.)

I need not detain this Commission or this group assembled with the remarkable facts of Tennessee Gas Transmission Company's recent growth. In the light of these facts anyone who says that the return to equity should be the same today as it was a decade ago for a struggling, small company should re-examine his analyses.

(1317)

Q. Dr. Robertson, do you concur in Mr. Symond's view that earnings-price ratios are of little use in reckoning the cost of capital? A. The only people who take this view are witnesses for public utility companies who wish to argue for excessively high rates of return to equity. Although I have refined the earnings-price approach to computing the return to equity, earnings-price ratios are generally accepted as the best single indicator of investors' attitudes toward an equity security.

Q. Would you agree with Mr. Symonds that the Federal Power Commission has allowed higher rates of return to equity for companies with thin equities than it has to companies

1318

with thick equities? A. I certainly do not. It was a tenuous and devious calculation by which Mr. Symonds reached this conclusion, one which patently led to a false inference. To be sure, companies with thin equities

(15)

show a higher return to equity, particularly if computed by Mr. Symonds' "residual" method for the simple reason that they are taking advantage of the greater leverage provided by their proportion of borrowed funds. This phenomenon of "trading on the equity" is so well known to financial analysts that it must be unnecessary for me to go into this matter further.

1319

Presiding Examiner: All right.

By Mr. Stewart:

Q. Dr. Robertson, will you go ahead and make such amendments as you think necessary to your prepared testimony? A. Yes.

At the time of preparing this testimony originally, I used as a basis of my computation the dividend, the annual dividend presently in effect, and certainly then in effect of $1.40. After I had prepared the testimony, it became clear that a computation ought to be made on the basis of the dividend that should be reckoned as a consequence of the stock split that was to be approved at a stockholders' meeting on April 8, and that--

Mr. Littman: 1960?

The Witness: 1960. I presume that that stock split was approved.

Now, here we have a problem in arithmetic.

Presiding Examiner: If I may interrupt at this point, would counsel for Tennessee agree that the stock split was approved?

Mr. Littman: Yes, Mr. Examiner.

Presiding Examiner: All right.

Mr. Littman: I might also add there is some reference to that in Mr. Gardiner Symonds' testimony, as I recall it.

Presiding Examiner: All right.

The Witness: Now, I have taken in this computation the

Value Line's estimate that when the new issue is effected and the new dividend rate of $1.10 per share goes into effect, that it will be the equivalent of $1.65 on current shares.

I have, therefore, made a computation on the basis of this estimate of $1.65, and it appears in my Computation 7 (a).

Now, computing on this basis, I find that the company's current cost of common capital is 7.19 per cent. Once again reckoning on the average closing price of the stock during the four-week period January 18, 1960, to February 12, 1960, we find that the price is $34.91. On the basis of an indicated dividend of $1.65, the average yield of this

stock during the four-week period preceding the public offering was 4.73 per cent. And computing on the basis of the most recent experience, to allow for the cost of issuance, we obtain a current dividend cost of issuance of 5.04 per cent.

I have reckoned the company's 1959 pay-out ratio to be 70.1 per cent. Taking the reciprocal of this figure, 1.4265, and multiplying it by 5.04 per cent, we get 7.19 per cent.

I thus arrive, making these changes, on the basis of the summary as it appears at the beginning of my prepared testimony, inserting 7.19 for 6.53—

By Mr. Stewart:

Q. Excuse me, Doctor; you mean as it appears in your exhibit, do you not? A. As it appears in my exhibit. I'm sorry.

1321

Q. On page 1. A. On page 1 of my exhibit.

Mr. Littman: Exhibit 28.

The Witness: Exhibit 28, yes.

Inserting these new figures, I get the weighted cost of capital per $100 of capital 1.89 per cent, and my total figure then 5.88 per cent instead of 5.70 per cent.

Now, if we take an average of my historic cost of 5.01 and my current cost of 5.88, a simple arithmetic average is 5.45 per cent.

This, then, is the result of my second calculation on the basis of further information as it became available to me.

. . . . . .

1322

Cross-Examination

By Mr. Littman:

. . . . . .

1342

Q. You understand, Doctor, what I am trying to arrive at is what portion of your average figure at the bottom of your summary, page 1 of your Exhibit 28, 5.445 per cent, what part of that average constitutes the allowance for equity? A. Well, it is pretty—I don't know that I ever thought of trying to arrive at the allowance for equity. I have simply—this average figure is, taking an arithmetic mean of two figures—is meant to suggest that, if you weigh in historic costs equally with current costs, you come to figures half way in between, which is more or less obvious, and I like to use this for reference purposes.

After all, we are trying to get to some kind of a touchstone.

I had never made any attempt to average two figures. As nearly as I can judge, in short, for this particular company, based on its most recent offering of securities—

Q. Well— A. Pardon me. A return of 7.19 was sufficient to lodge those securities in the market place. That is what my testimony is and what my figure means.

If we, back in 1953, again as nearly as I could reckon it, a return of 7.99 per cent was sufficient again to lodge these securities in the market place, and this is what I mean by the cost of capital.

1343

Q. Now, assuming, subject to verification, that the common equity shown by the Tennessee's report to its stockholders for 1959 amounted to $329,518,000 at the end of that year, what would the earnings be on that equity at 7.59 per cent, which is the average of your historic and current equity? A. Well, I would accept your figure if you have made—

Q. Well, we have worked it out, and I will give you the answer and you can check. A. Subject to check, I will take your answer.

Q. The answer is $24,010,462.

Now, Doctor, if we divide that figure by the number of shares outstanding at the end of 1959, namely, 23,312,267 shares, we get earnings of $1.03 per share. Do you follow me so far? A. I certainly do.

Q. And I trust you will accept my arithmetic subject to check? A. Yes. I'm used to this question, so I follow you very clearly.

Q. Now, applying the payout ratio of 70.1 per cent used by you for 1960, the dividend then would become 72.2 cents a share? A. Yes.

Q. Is that correct? A. Yes; this arithmetic follows, that is correct.

Q. Yes.

1344

A. Now, I would—

Q. Such a—pardon me; I will just finish this. A. Yes.

Q. Then you can make comments.

Now, that is approximately—well, that 72.2 cents per share would compare with the dividend, would compare with the $1.65 dividend which you used in starting your computation for 1960? A. That is correct. It would be considerably less.

Now, of course, Mr. Littman, I would simply say that this application of a figure of this sort—it is not, certainly, what I intended; I have reckoned the cost of capital in total as a touchstone for the Commission's judgment in arriving at a rate of return.

Now, if, for example, you do what—we can play with these figures endlessly. If you take my 5.45 percentum and apply it to the capitalization of Tennessee Gas Transmission Company, just as a check, you come out with a figure that gives you almost precisely their net operating revenue for last year, which I would say bears out my computation, that—and this is my answer to this particular point, that

you cannot by simply setting a rate of return, say, of 6 per cent and then allocating so much to the debt expense, so much to the preferred stock expense, by subtraction come to a rate of return to equity that is meaningful in the cost-of-capital sense of the term. There

1345

is no question that the rate of return to equity as a residual figured in this manner is greater than what I have testified to.

But I still insist that the cost of capital, of equity capital, to this company as of a very recent time period was 7.19 per cent.

The fact that you get a considerable leverage through the smaller-cost debt money does give you a result that is considerably greater than the one that I have given.

Q. Well, I may want that answer read back in just a minute, or we may have it read during the recess, to make sure we understand particularly one part of it.

But before we get into that, let me get this clear on the record.

Is it your recommendation to the Commission that these historic, so-called historic and current costs of equity capital figures which you arrived at of 7.99 per cent and 7.19 per cent, respectively, be applied to the book cost of the equity of Tennessee in arriving at the rate of return? A. No, sir, it is not. It is my recommendation to the Commission that it consider my reckoning of the cost of capital, which comes just under 5½ per cent, in making a decision as to whether to increase the rate of return to the Tennessee Gas Transmission Company from 6 to, in this particular case, 7 per cent. I ask that they consider this as a norm of judgment,

1346

as a standard of judgment, that they consider what an overall rate of return of 5½ per cent or 5.45 per cent

would, on the basis of the capitalization of this company, yield the company.

Q. Well, let me get this straight, because I think it is rather critical for the purpose of understanding this record.

You have reflected within your 5.445 per cent average rate of return, which is the figure that you come up with at the end of all these computations at the bottom of page 1 of Exhibit 28, three things: (1) a return on debt, (2) a return on preferred stock, and (3) a return on common equity ? A. Yes.

Q. Is my understanding correct— A. A cost of raising these, I think I would prefer, rather than a return. But if you consider this to be—I am not sure but what we are talking about the same thing. I would say the cost of obtaining these three kinds of capital is as I have stated them.

Q. Well, is it your recommendation that the percentages of 4.2 for historic cost of debt and 5.35, current cost of debt, be applied to the book cost of the debt to obtain the dollars of return to be allowed in this case? A. No. As I say, I don't try to make these breakdowns. I am trying to arrive at some meaningful total cost of capital to the company. I have simply tried to—this is a subject

1347

that I need not tell you; it is treated endlessly in literature; where there are currently journal articles and magazine articles on the subject of how you arrive at a cost of capital. It is an elusive concept, perhaps, and the best way I know, Mr. Littman, to compute it is to go through the procedure that I have gone through to come to a figure.

In short, I am testifying that today, as nearly as I can judge by the Tennessee Gas Transmission Company's experience, if it is to go out into the market place to get capital today, its bonds or its debt capital would cost it

about 5.35, its preferred stock about 5.65 and its common equity capital would cost 7.19 per cent; or weighting these according to an approximate capital ratio—capital structure ratio, the cost of capital to this company is 5.88 per cent today. It may be a little more tomorrow, or less. This is what capital costs, and presumably if you get a return to all the capital invested in a company, then all of the investors receive their due.

. . . . . .

1445

L. E. Katzenbach

By Mr. Werner:

Q. Mr. Katzenbach, I am going to read to you some of the testimony of Dr. Shaffner and ask you a question thereon. At Transcript page 1005 Dr. Shaffner was asked: "What is the use and significance of an earnings-price ratio" and he answered as follows: "Many investment advisory services and security analysts regard earnings-price ratios as a reflection of the rate at which investors are capitalizing earnings from investments in common stocks. They are used to compare one stock with another and provide a measure of what it takes in the form of earnings to induce investors to buy common stocks. From this point of view, they provide an indication of the cost of capital in the form of common stocks." Continuing Dr. Shaffner at Transcript page 1006 stated: "The price-earnings ratio could be described as the number of dollars which investors are paying for an equity in a dollar of the earnings of a particular company. From this standpoint, it helps provide an indication of the cost of capital in the form of common stock."

I also refer you to Transcript page 1119 where Dr. Shaffner made the following statement: "What I consider to mean what is meant by the cost of attracting

capital are earnings-price ratios. That gives you the answer to one of your tests. And I think I have said so in my testimony."

1446

Do you agree with these statements of Dr. Shaffner?

(End of Page 1)

A. I must emphatically disagree with Dr. Shaffner's conclusions as I understand them.

Q. Please explain your understanding of his conclusions in these statements. A. I understand Dr. Shaffner to say that earnings-price ratios provide an indication of the rate of return on the book value of common stock equity which is sufficient to attract capital in the form of common stock. Any such conclusion is unwarranted and incorrect.

Q. Please explain why you believe this to be so? A. Dr. Shaffner, and others who have advanced this doctrine, have erred in reaching the conclusion that the ratio of earnings to market price is regarded by investors as a measure of a fair and adequate rate of return on book value of common stock equity. Any such conclusion is inconsistent and illogical in that a yardstick derived from market values is applied to book values. Moreover, in all my experience in dealing with investors, I have never encountered a single responsible investment officer of any trust company, insurance company, mutual fund, pension fund, or any other manager of investment funds, who employed any such principle of investment philosophy. In fact, I submit that to do so would be disastrous to the officer and his

1447

clients.

Dr. Shaffner has stated that earnings-price ratios are used to compare one stock with another. I agree with

that statement. He adds that earnings-price ratios provide a measure of what it takes in the form of earnings to induce investors to buy common stocks. If Dr. Shaffner

(End of Page 2)

means that the earnings-price ratio measures what it takes in the form of past earnings as related to market price to induce investors to buy common stocks, then I would go along with him on that with only minor reservations. But I assume that Dr. Shaffner meant by his statement that earnings-price ratios provide a measure of what it takes in the form of earnings on book value, as distinguished from market value, to attract capital, and this is where he is mistaken.

Q. Can you cite an example to demonstrate your point? A. The stocks of most natural gas transmission and distribution companies, stocks of most electric light and power companies, and most industrial stocks for that matter, sell at market prices materially in excess of book value. So, for example, let us take the stock of a company which is selling at a price of $34.00 and whose most recently reported earnings amounted to $1.70 per share. Let us assume, further, that the book value is $17.00 a share. In this

example the Company is earning 10% on book value and the stock is selling at an earnings-price ratio of 5%. Under the earnings-price ratio theory of fixing return on common equity, the investor who pays $34.00 and thus establishes an earnings-price ratio of 5%, would, in effect, be reasoning "I pay this price because I think a 5% rate of return on book value is attractive". This means that although the Company earned $1.70 a share last year he would really be quite content if the Company earned 5% on its $17.00 book value, or 85¢ a share, in the future. To

state this proposition is to refute it. Investors are not so lacking in common sense. Moreover, if earnings were

(End of Page 3)

reduced from 10% to 5%, the shock would cause a drastic change in earnings-price ratios themselves.

Q. It is true, however, is it not, that if the Company in your example were to sell additional stock at a price of $34.00 and if it were to earn 5% on the proceeds from the sale of this additional stock, the earnings per share for the Company as a whole would not deteriorate but would remain at the original level of $1.70 per share? A. On the assumptions stated in your question, the answer is yes.

Q. Well then, is not the earnings-price ratio, at least under these conditions, a fair measure of what it takes

in the form of earnings to induce investors to buy common stocks? A. No, for a variety of reasons. To choose one I would point out that in order to maintain the original earnings of $1.70 per share, which represented a 10% return on book value of $17 per share, it would be necessary to leave this rate of return on the original equity unscathed. If the sale of additional stock at $34 a share were to finance an expansion program to double the original size of the company on the assumption that the new facilities would earn 5%, the resulting composite rate of return would be 7½%. If the expansion program were of a lesser magnitude, it follows, of course, that the composite rate of return would be greater than the 7½% and less than the 10% we had to start with, and if the expansion program resulted in more than a doubling, it follow that the composite return would be somewhere between 7½%

and 5%. In any case, the effect would be to reduce the overall composite rate of return on

(End of Page 4)

equity even though the earnings per share were in no way invaded. Any regulatory approach, the effect of which would be consistently to reduce the rate of return on common stock equity to the level of the earnings-price ratio, would ultimately impair the financial integrity of the company.

1450

It would weaken the coverage ratios or margin of protection of the senior securities and put the common stockholders in an increasingly tenuous position.

I would like to emphasize that a regulatory process, the effect of which would be to stunt the potential growth of earnings per share on the common stock, would seriously inhibit the company's ability to attract the additional common stock equity needed for expansion of service to consumers. The reason investors buy common stocks at prices which currently provide lower yields than Aaa bonds is the conviction that earnings per share will grow, permitting dividends to be increased to levels which eventually will give a higher yield on the cost than that available on bonds. If the outlook for any given stock does not allow this conviction, that stock will lack the appeal necessary to attract additional common stock equity capital in competition with other stocks which do offer satisfactory growth prospects.

Q. I refer you now to Transcript page 1013 where Dr. Shaffner made the following statement in his direct testimony: "Third, earnings-price ratios should be used with judgment and discretion. They should not be used on a spot basis, or on a basis of transitory and untypical con-

ditions. In times like the recent past, they should be considered as the minimum

1451

(End of Page 5)

return which it takes to attract equity capital, as a floor, so to speak." Is it your position that earnings-price ratios should not be used at all, even with judgment and discretion, as a factor to be weighed in reaching a judgment as to a fair rate of return on the book value of common stock equity? A. It is my opinion that they should not be used at all. I say this because the premise that earnings-price ratios are indicative of the rates of return on common stock equity—that is to say, book value—necessary to attract capital is mistaken.

Q. I would like to refer you to pages 36, 37 and 39 of Dr. Shaffner's Exhibit No. 21. Pages 36 and 37 show tabulations of earnings-price ratios of three different series of natural gas pipeline company common stocks. I would also like to refer you to the charts on pages 1, 5 and 7 of the same exhibit which show yields on U. S. Treasury bonds, Moody's bond yield average for industrials, public utilities and railroads, and Moody's bond yield average of public utilities according to rating. In his direct testimony Dr. Shaffner makes the observations that since about 1946 the bond yields charted on pages 1, 5 and 7 have been rising while during most of this time the earnings-price ratios, as presented graphically on page 39, have been declining.

1452

Dr. Shaffner was then asked what conclusion he draws from this fact. Now I read you a portion of his answer at Transcript page 1009: "I conclude that the cost of debt capital and the cost of equity capital can move, and for substantial periods of time in the past have moved in op-

posite directions." Do you agree with Dr. Shaffner's conclusion which I have just read?

(End of Page 6)

A. No, I do not because I do not accept earnings-price ratios as being synonymous with the cost of equity capital; however, I can agree that during this period bond yields have been rising and the trend of earnings-price ratios has been downward.

Q. To the extent that there has been a decline in earnings price ratios during this period, does this not mean that common stocks have become more popular, relatively speaking? A. Yes, I think that is a fair conclusion.

Q. If earnings-price ratios have declined and if you grant that such a trend may be indicative of an increase in popularity with investors, does this mean that investors would therefore be satisfied with a lower rate of return on equity than was the case when earnings price ratios were higher? A. No.

1453

Q. Then can you offer an explanation why earnings-price ratios can decline while bond yields are going up? A. Rising interest rates on bonds do have a retarding influence on the demand for common stocks. A trend toward higher interest rates on bonds reduces the relative attractiveness of common stocks; however, there is a counter influence, the effect of which can rsult in divergent trends as between bond yields and earnings-price ratios. The fact that interest rates on bonds have been rising means, of course, that bond prices have been going down. The impact of past declines in bond prices coupled with investor anxiety to protect against the gradual loss in the purchasing

(End of Page 7)

power of the dollar tends to accentuate the demand for common stocks of companies which offer promise of growth

(1453)

in earnings per share with resulting increases in dividends. Through purchases of common stocks which offer these prospects investors hope to offset the effects of the inflationary trend. The demand for common stocks of companies offering good prospects of growth in earnings per share has been of sufficient magnitude to maintain or cause a decline in earnings-price ratios despite the rise in bond yields. Thus the decline in the earnings-price ratios of natural gas transmission stocks over the past 15 years or so should

1454

not be construed as indication of any decline in the rate of return on equity needed to attract capital. To the contrary, the fact that investors have become increasingly sensitive to the growth prospects pertaining to common stocks accentuates the importance of maintaining rates of return on common stock equity at levels commensurate with that of other businesses having corresponding risks.

1455

Cross-Examination

By Mr. Spalter:

Q. Mr. Katzenbach, referring to your testimony at page 2, where you discuss the use of earnings-price ratios, you referred to your failure or your lack of knowledge of use of the principle you state Dr. Shaffner enunciated by any professional people in the business, that is, investment officers of trust companies, insurance companies, and so forth.

I would ask you with respect to the earnings-price ratios do those investment officers of any of the companies or funds that you indicated use earnings-price ratios at all? A. Yes, it is a common yardstick but not for the purpose we are discussing here.

Q. For what purpose is it a common yardstick? A. It is used as a basis of comparison between two stocks or a group of stocks. You take the latest available reported earnings, as a general rule, per share, and then, in investment circles, you compute what is known as a price-earnings ratio. You say, in other words, that stock A is

1456

selling at 16 times earnings and stock B is selling at, say, 14 times the latest available reported earnings. That gives you a basis of comparison of the prices of those two stocks with respect to the latest reported earnings for the past. And if A and B companies were similar in respect of prospects and other things, then this yardstick provides a convenient basis of comparison.

But that is the limited way—I mean, it is in that limited way that they are used as a basis for comparison.

Q. Is it any way unusual for a service such as yours, or any of the others in the financial world, to submit a statement to clients indicating the price-earnings ratio of any stock without making that comparison that you referred to as between two stocks; just to indicate that the price-earnings ratio of this stock is 16 to 1? A. If I understood your question correctly, Mr. Spalter, I think the answer is "no." In other words, when preparing a write-up, a memorandum on any given company's stock, or any group of stocks, it is quite customary to show the price-earnings ratios that are applicable. It is a commonly used yardstick for the limited purpose it serves.

Q. Yes.

Showing the price-earnings ratio of the stock that is being talked about, or being recommended in the resume that is being furnished the client, without any comparison to the

1457

price-earnings ratio of any other stock, isn't that correct? A. I didn't understand your question.

Q. Well, you have indicated that the price-earnings ratio is used as a comparison between stocks, and I was asking you whether it is unusual for the services, when they furnish a resume or a report to a client on a stock, whether it is unusual for that report merely to indicate the price-earnings ratio of that stock, without comparing it to any other stock in the field, just to indicate that the stock that is being reported has a price-earnings ratio of 16 to 1, for example? A. I think I understand your question now, Mr. Spalter. In other words, if we were to write a story on a particular stock we would give a number of statistical ratios and a discussion, and it would be customary among the statistical ratios given to show the price-earnings ratio.

Q. Of that particular stock. A. Of that particular stock.

Q. Without comparing it to any other stock in the market on that price-earnings ratio? A. Well, if the memorandum or discussion pertains to only one stock, why, then, you would have only that one stock. Of course, frequently when one particular stock is written up in a memorandum you prepare a comparison with other stocks in order to indicate the statistical ratio comparisons between them. In other cases you don't. The

1458

practice varies according to the purpose of the memo and its breadth and scope.

Presiding Examiner: Mr. Katzenbach, where you in such a memo refer only to the stock which is under discussion, and in those instances where you do not refer to other stocks, or compare them with other stocks; what is the purpose of setting forth in that memo the price-earnings ratio of that particular stock, as such, and not in

the context of comparing it with the price-earnings ratio of other stocks?

The Witness: Simply this, Mr. Examiner, that the memorandum that this—this hypothetical memorandum that we are discussing is presumably being read by other people who are fully aware or generally aware of the price-earnings ratios that are applicable in other situations. So without bringing all the comparisons to his attention, a brief memo of this sort would assume that the reader, in seeing the price-earnings ratio for this company, it would have meaning to him because he would have in his mind the comparable earnings-price ratios of other situations in similar industries and in other industries.

So it goes without saying that you present it as a figure to be compared by the reader with others, and you don't necessarily give him the other figures to compare it with, you assume he has them in his mind.

By Mr. Spalter:

1459

Q. You referred to the hypothetical report or memorandum. Let me ask you, Mr. Katzenbach, is Kidder, Peabody & Company a recognized operating company in the investment field? A. Yes, indeed.

Q. Just, for example, I would like to show you a copy of one of their memoranda issued May 13, 1960, and ask you whether or not in that memorandum they point out the price-earnings ratio of the stock being discussed, which happens to be the Outboard Marines Corporation, and whether that memorandum in any way compares the price-earnings ratio of that stock with any other stock on the market? A. I will have to read it first.

Q. Please do. It is not very long. A. I have read through it very quickly, not every word, just scanned it to try and save time. But they make the comment that the price-earnings ratio of 16 to 1 appears modest in com-

parison with many other growth and limited growth equities.

So I do think they draw a comparison without naming the other situations.

Q. I see. And that is what you call a comparison, and it is on the basis of such a statement that you would say that the client has the price-earnings ratios of other stocks in mind so that he will know in his own mind, after having received this report, which is the better stock, and make a

1460

selection therefrom?

Mr. Werner: The acoustics in this room are very poor. May I have that question read back?

Presiding Examiner: Yes.

(Question read.)

The Witness: I don't understand your question, Mr. Spalter.

By Mr. Spalter:

Q. Your answer to the Examiner was that if a report only has this single statement of the price-earnings ratio of that one stock being reported on, that the client has in mind, has information that he may have received somewhere, of the price-earnings ratio of other stocks, so that he doesn't have to have it all set out for him in this one report as to the one stock. Isn't that the gist of what you said to the Examiner? A. Yes. I was assuming that it is possible, it happens, it is not infrequent, that investment firms will prepare a report on the company, they will cite the price-earnings ratio for the particular stock, they usually express an opinion, either favorable or unfavorable, and I said that is frequently done.

I said earlier that frequently comparisons are actually given with a number of other companies that are in the same or similar industries, where a number of statistical ratios

1461

are given. You have shown me a memorandum which quotes—cites an earnings-price ratio of 16 to 1, and then goes on to give the firm's opinion that this is attractive in relation to other situations which they characterize as growth or limited growth companies.

They have expressed their opinion.

Now, this memorandum is presumably intended for investors who have a general knowledge of the investment field. Some investors might just accept the statement and take the firm's opinion that the stock is attractive and decide to buy some. Others might wish to do some further investigation of their own, and actually compute price-earnings ratios for other companies they might consider possible.

Mr. Werner: Excuse me—I am sorry. Were you through?

The Witness: I was about to conclude my statement by saying that these memoranda that we have been discussing can take all different kinds of forms, so far as their brevity and completeness is concerned.

Mr. Werner: Excuse me. In your last answer you made a statement to the effect that there was an earnings-price ratio of 16 to 1.

The Witness: I thought I corrected that.

Mr. Werner: You meant a price-earnings ratio?

The Witness: I have been talking and have meant to say price-earnings ratios in these discussions so far.

1462

Mr. Werner: Thank you.

By Mr. Spalter:

Q. Just to clarify the record, one is just a converse of the other, isn't it? A. The price-earnings ratio is the

converse of the earnings-price ratio. The price-earnings ratio is the one that is used in the investment business. Earnings-price ratio I have seldom, if ever, seen in statistical or analytical memoranda on securities.

Q. Mr. Katzenbach, on page 3 of your testimony, actually the answer begins the last three words on page 2, and I quote:

"If Dr. Shaffner means that the earnings-price ratio measures what it takes in the form of past earnings as related to market price to induce investors to buy common stocks, then I would go along with him on that with only minor reservations."

I wonder if you could explain these minor reservations that you have, of going along with that statement? A. Well, I had simply this in mind, Mr. Spalter, that as a sweeping generalization this might be an acceptable proposition, or is an acceptable proposition, and I say that I go along with Dr. Shaffner in that respect.

But the statement, really, I think deserves qualification in that not every company is in a position to raise

equity capital, and even though that company may have its stock selling in the market, and at some price and at some earnings-price ratio, it doesn't mean that every company that has a stock that is traded or listed is necessarily in a position to induce investors to buy its common stock. But in the case of an average healthy company that has a stock, that has a recognized market, either over-the-counter or on an exchange, most such companies are in a position to sell additional common stock, assuming that the purpose for which they are issuing this stock is one that makes sense to investors and they can usually sell it at a price fairly close to the market which exists at the time.

Presiding Examiner: I would like to try, if I may make a suggestion, try to keep the answers tighter and more restricted to the questions. I have the feeling we are using a lot of time on things that aren't essential, really.

By Mr. Spalter:

Q. At page 8 of your testimony, Mr. Katzenbach, you state, "The demand for common stocks of companies offering good prospects of growth and earnings per share has been of sufficient magnitude to maintain or cause a decline in earnings-price ratios despite the rise in bond yields."

I would ask you, first, are you saying that only growth stocks are in demand today on the market? A. Growth stocks are increasingly sought after today

by comparison with common stocks that have limited growth prospects. I am not saying that only growth stocks have any demand. There is a buyer and seller, of course, for all of the stocks listed and traded every day.

Q. Well, what bothers me about that sentence that I read to you, Mr. Katzenbach, is that the demand for growth stocks alone that has been sufficient to cause a decline in the earnings-price-ratios? A. What I am trying to say is this, Mr. Spalter, that growth stocks have become more and more popular. Now, there are all different graduations of growth stocks, utility stocks offer a modest amount of growth, a, i there are others which are, in the minds of investors, in a position to offer tremendous growth prospects. But it has been an increasing development in the last several years in the market for investors to concentrate on the growth aspects, and to seek out those stocks which offer growth, and to shift out of and to pay less attention to those which seem to lack interesting growth prospects.

So you have had increasing popularity of your growth

stocks, decreasing popularity of the ones which seem to lack growth.

Q. Well, let me ask you, then, that sentence: When you use the term "earnings-price ratios," are you talking about the earnings-price ratios of those stocks, or are you

1465

talking of earnings-price ratios of representative groups of stocks or of the stock market entirely, of all the stocks? A. I am speaking of natural gas stocks which we have just been discussing in the earlier part of the testimony here as having experienced some decline in earnings-price ratio over a period of years.

I am speaking, also, generally of electric utility stocks which have also experienced a decline in earnings-price ratio, while, of course, bond yields have been going up.

And I would include in that statement also other categories, other industries which are regarded as having excellent growth prospects. But, specifically, of course, I have in mind the natural gas companies where there has been a very slight decline in the earnings-price ratio over a period of years.

. . . . . .

1474

By Mr. Freeman:

Q. Mr. Katzenbach, with reference to your use of the price-earnings ratios which you and Mr. Spalter discussed,

1475

the price-earnings ratio of company's stock would be a most important yardstick in a decision as to the method of financing expansion, that is, whether they issue bonds or comon stock, would it not? A. In view of the door closing,

and another noise in the room, I didn't hear the whole question.

Presiding Examiner: Read the question.

(Question read.)

Mr. Werner: Do you understand the question?

The Witness: Yes, I believe so.

I don't think that it would be a most important question in determining whether or not the company would issue bonds, preferred stock, or common stock. It would be a consideration and a tool used to evaluate the present market position of the common stock in considering a program which involved the sale of common stock, because you necessarily would have to see where the common stock is selling in relation to other securities.

By Mr. Freeman:

Q. Wouldn't it be one of the most important comparisons if you compare the cost of bonds in terms of interest with the proceeds from the sale of stock compared with the earnings which are required to attract that stock? Isn't that a pretty basic comparison that a company would make in deciding whether to issue bonds or float additional stock?

1476

Mr. Werner: Do you understand that question?

Presiding Examiner: You mean, does the company itself look at earnings-price ratios of its own stock to determine whether to issue new common stock?

Mr. Freeman: That is correct, Your Honor.

The Witness: A company would certainly look at the price of its own common stock to consider whether or not it felt that the common stock was selling at relatively a fair and favorable price with respect to other comparable situations. If the company decided that the price of the stock was much lower than they thought it should be, in the

light of other comparable market situations, and if they thought that there was some possibility that the stock might be selling at a higher price six months from now, due to an improvement in earnings, or something of that sort, they might decide to defer common stock financing and do it at what they hope would be more favorable terms at a later date.

By Mr. Freeman:

Q. My question is simply this: Isn't this another use of the price-earnings ratio? In other words, isn't that used as a yardstick in comparing the cost to the company of raising equity, with its cost in raising money through floating bonds?

Presiding Examiner: Weil, Mr. Katzenbach has agreed

1477

that the company looks at the market price at which its stock is selling, and I take it the next question is, does it look at it in comparison with its current level of earnings.

The Witness: It wouldn't be an important or significant test in determining whether to sell bonds or to sell common stock, to compare the price-earnings ratio or earnings-price ratio of the common stock to the interest cost for selling bonds.

That would not as a general matter be a determining factor in reaching a decision whether to sell bonds or common stock.

By Mr. Freeman:

Q. I believe earlier in the case you testified that you were familiar with Electrical World, that magazine? A. I know of it, yes.

Q. I would like to read you from their magazine. News

Letter of March 28, 1960, and ask you if you agree with the statement therein:

"The market price of common is a convenient guide: It combines, in a single figure, all symptoms of a company's financial ills, or health. The market itself appraises the company's financial history, cost of money, and prospects for the future. The outcome—price earnings ratio—is the most important element in a decision to issue debt, preferred

1478

or common stock."

A. Well, that is their opinion, I guess.

Q. My question is, do you agree with it? A. It is a consideration, but you asked me if it was a most important consideration: I have already answered that a comparison of the earnings-price ratio with the bond yield necessary to sell bonds is not a most important consideration leading to a decision as to whether or not to sell bonds, on the one hand, or common stock, on the other hand.

I might go on to say one more thing, and that is that obviously a favorable earnings-price ratio indicates a general favorable market atmosphere in which to sell common stock; quite true.

. . . . . .

1481

Q. Mr. Katzenbach, isn't it axiomatic that in the example shown on page 4 that book value per share will increase somewhat above $17 per share if additional common stock is issued at twice the previous book value per share figure? A. Yes.

Q. So we assume that the variables in this particular example are such that the book value would then become $20 a share? A. Right.

(1481)

Q. Is it your position, then, that the same 10 percent return should be maintained, and the earnings of the company automatically increased from $1.70 a share to $2 a share solely because the company sold this additional common stock above market value? A. It is my position, Mr. Freeman, that the rate of return on the total amount invested by the stockholders in the company; in other words, the total of the common stock equity, should be maintained at a certain level in order to, let's say, attract equity capital. In this example I have used 10 percent.

It is my opinion that if the original investment by the stockholders earned 10 percent, if we accept that as a proper and reasonable rate of return on book value, then if the stockholders put more money into the company, the fact that it is a larger investment does not mean that the rate of return on

1482

the money they have put in goes down, but, rather, all other things being equal, the rate of return on the larger investment now in the company put up by stockholders should be maintained at 10 percent.

Q. Mr. Katzenbach, this stock was sold on the basis of earnings per share of $1.70 which, to use your words, was sufficient to induce the investors to buy the stock. Why, then, should the company's earnings be automatically increased to earn $2 a share? A. If the stockholders are going to put up more money they do so on the expectation that the earnings per share are going to grow. They are not going to be induced to put up money purely to spin your wheels, as the expression goes, and make no investment in earnings per share as the result of investing more money in the company.

Q. That investment in earnings would come in the future as these facilities are built and the company gets additional revenues, would it not? A. It would, if the rate of return

is sufficient to permit maintaining the given rate of return on common stock equity, yes, it would increase; that is what investors expect and look for.

Q. But my question is, in your example you would have it automatically increase, ipso facto, the minute the common stock was sold at a price higher than the book value per

1483

share? A. No, that doesn't follow, Mr. Freeman.

Q. Why doesn't it follow? A. Because, obviously, the new money has to be put to work at a sufficient rate of return in order to maintain the equity. The mere fact that you sell common stock at a price above the book value doesn't increase the earnings per share until the money is invested at a proper rate of return.

Q. But the $1.70 a share earnings was sufficient to induce the particular party to buy that stock at that particular price, was it not? A. Let us put it this way, Mr. Freeman: In this example the stock was selling at $34, and the latest reported earnings were $1.70 per share. I stated nothing to the effect that investors were paying $34 on the assumption that the earnings would remain at $1.70 and no higher.

Q. But those were the earnings at the time? A. Those were the earnings at the time, and to expand on the hypothetical example, the stock was selling at $34 because investors expected the earnings per share to increase over the future.

. . . . . .

1484

Gardiner Symonds

. . . . . .

Mr. Werner: May I have identified as Exhibit 31 a two-page exhibit, first page of which is entitled "Tennessee

1485

Gas Transmission Company, Capitalization—Consolidated February 29, 1960."

Presiding Examiner: There is identified as Exhibit No. 31 the two-page tabulation bearing the legend at the top "Capitalization—Consolidated February 29, 1960."

(The Document above referred to was marked Exhibit No. 31 for identification.)

Mr. Werner: May I have identified as Exhibit 32 a three-page exhibit, the first page of which is entitled "Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of February 29, 1960."

Presiding Examiner: There is identified as Exhibit No. 32 the document of three pages bearing the legend at the top "Cost of Debt Capital as of February 29, 1960."

(The Document above referred to was marked Exhibit No. 32 for identification.)

Mr. Werner: May I have identified as Exhibit 33 a two-page exhibit, the first page of which is entitled "Tennessee Gas Transmission Company, Capitalization—Non Consolidated February 29, 1960."

Presiding Examiner: There is identified as Exhibit No. 33 the two-page tabulation bearing the legend at the top "Capitalization—Non Consolidated February 29, 1960."

(The Document above referred to was marked Exhibit No. 33 for identification.)

1486

Mr. Werner: May I have identified as Exhibit 34 a two-page exhibit, first page of which is entitled "Tennessee Gas Transmission Company, Capitalization—Non Consolidated March 31, 1960."

Presiding Examiner: There is identified as Exhibit No.

34 a two-page document bearing the legend at the top "Capitalization—Non Consolidated March 31, 1960."

(The Document above referred to was marked Exhibit No. 34 for identification.)

Mr. Werner: May I have identified as Exhibit No. 35, a three-page document, first page of which is entitled "Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of March 31, 1960."

Presiding Examiner: There is identified as Exhibit No. 35 the three-page document bearing the legend at the top "Tennessee Gas Transmission Company and Consolidated Subsidiaries Cost of Debt Capital as of March 31, 1960."

. . . . . .

1495

By Mr. Werner:

Q. Mr. Symonds, have you reviewed Exhibit No. 20 sponsored by Dr. Shaffner, which exhibit shows, on an index number basis, market prices of common stocks of natural gas pipeline, industrial, natural gas distribution, railroad, electric utility, and telephone and telegraph companies for the years 1943 through 1959? A. Yes, I have.

Q. Is it proper, in your opinion, to use index numbers as a means of comparing market prices of stocks? A. Yes, it is, provided, of course, that the index numbers are compiled and interpreted properly.

Q. Will you explain what you mean by "interpreted properly"? A. First of all, index numbers relating to two or more things or items must be "chained" together at some starting point. This starting point may have no real significance other than that of convenience in comparing developments thereafter. To illustrate, there is no significance to chaining pipeline, gas distribution, industrial, and the other companies together in 1941-43 as is done in Exhibit 20 other than simply to get a starting

point. In other words, there is nothing special in the 1941-43 period which is equally applicable to all of these industries. Additionally, if we are to appraise properly the trend in the market prices

of the stocks being compared, we should compare not just two dates, 1941-43 and 1959, but rather a number of years.

(End of Page 1)

Q. If you use some other date than 1941-43 as the starting point, would the figures be different from those shown in Exhibit 20? A. The figures would be different, but it is not necessary to use a different starting date in order to make appropriate comparisons. As I just explained, even with an arbitrary starting date to which the various index series are chained together, we can still make valid comparisons if the scope of comparisons is broad enough.

Q. I show you Exhibit 30 and ask if it was prepared by you or under your direction? A. Yes, it was.

Q. Please explain that exhibit. A. Exhibit 30 shows the percentage increase in market prices of the stocks included in Exhibit 20 from each of the years 1943 through 1958 to December 1959, for the six groups of companies included in Exhibit 20. Thus, looking at the column headed "1943", we find that natural gas pipeline company stocks increased 411% between that year and December, 1959. This represented the second largest increase of any of the industries portrayed—Industrials being first. Comparing 1944 with December, 1959, the price of the natural

gas stocks increased 421%, which was the highest increase of any group. Using 1945, 1946 and 1947, natural gas pipelines had the second largest increase to December, 1959. From the year 1948, natural gas pipelines ranked third, and from the years 1949, 1950 and 1951, they ranked fourth.

From the years 1952, 1953 and 1954, natural gas pipelines ranked sixth,

(End of Page 2)

that is to say, last. From 1955 and 1956, natural gas pipelines ranked next to the last, and from 1957 and 1958, they again occupied the bottom position. I believe it is significant that for every year from 1948 to 1958, inclusive, the increase in prices of the natural gas pipelines, as compared with the price prevailing in December, 1959, was below the average for the six groups of companies. I would like to point out also that electric utilities had increases which were above the average for each of the years 1951 through 1957. In other words, the relatively greater increase in the prices of natural gas pipeline stocks referred to by Dr. Shaffner occurred prior to 1949. Since that time, Exhibit 30 shows that natural gas pipeline stocks have not fared as well compared with the stocks of the other industries portrayed on that exhibit.

Q. Does your review of Exhibits 20 and 30 lead you to the conclusion that common stocks of natural gas pipeline

companies are not growth stocks? A. No. Exhibit 21 sponsored by Dr. Shaffner shows that his ten company group of natural gas pipeline companies had substantial increases in earnings per share, in dividends per share, and in book value per share generally over the period 1949 to 1959.

Q. Still referring to Exhibit 20, would you say that the increase in the market price of railroad stocks from 1941 43 to 1959 is an indication that railroads are prosperous?

(End of Page 3)

A. No. We know that the contrary is true, and that railroads are having difficult economic times. They need capital to improve and modernize their facilities. The

situation was so acute that the Congress in 1958 passed an act under which the Government guarantees loans to railroads upon approval of the Interstate Commerce Commission. Railroad stocks are selling with very few exceptions at a fraction of their book value. On the other hand, natural gas pipeline stocks and many electric utility common stocks are selling at twice or more of their book value. These comparisons illustrate limitations in the use of changes in market prices of stocks in determining a fair allowance on common equity capital as represented by book value.

Q. Based on Exhibit No. 22, the earnings on the common

equities of the ten natural gas pipeline companies for the years 1951 to 1958 averaged 14.2%; and based on page 33 of Exhibit 21 the common equities of the ten companies averaged 25% for the period. Please give us the percentage of earnings on the average common equity of the 41 natural gas pipeline companies for the same period, based on the Statistics of Natural Gas Companies, 1958 edition, Page XII, issued by the Federal Power Commission. A. The earnings averaged 12.4% for the 41 companies. These are the same 41 companies referred to in the footnote on page 35 of Exhibit 21.

Q. What was their average ratio of the common equity to total capital for the period 1951 to 1958? A. 31% as determined from page 35 of Exhibit 21.

(End of Page 4)

Q. There is evidence in this proceeding at Transcript pages 991-2 regarding Standard & Poor's Industrial Stock Index. In order for the record to be more complete, will you give the earnings per share for each of the years 1948

to 1959 as contained in that index? A. The earnings per share were:

1948	$2.34
1949	2.40
1950	2.93
1951	2.54

1500

1952	2.46
1953	2.60
1954	2.89
1955	3.78
1956	3.53
1957	3.50
1958	2.95
1959	3.52

I would like to point out that the $3.52 figure I have just given for 1959 represents the earnings for the 12 months ended in the third quarter of 1959, the latest period for which information is available at this time.

Q. There is also testimony at Transcript page 1009 concerning the earnings for certain years on net assets of industrial corporations according to studies published by the First National City Bank of New York. Again, in order that the record may be more complete, will you give the per cent earned on net assets of industrial corporations for each of the years 1948 through 1959 as shown by that bank?

(End of Page 5)

A. The percentages are:

1948	18.9%
1949	13.8
1950	17.1
1951	14.4

1952	12.3
1953	12.5
1954	12.4
1955	15.0
1956	13.9
1957	12.8
1958	9.8
1959	11.6

Q. Please define net assets as used in the First National City Bank study. A. Net assets consist of assets less liabilities, or, in other words, common stock, earned and capital surplus, and preferred stock.

Q. Mr. Symonds, I show you Exhibit 31 and ask if it was prepared by you or under your direction? A. It was.

Q. Please explain the purpose of the exhibit. A. The exhibit is intended to be used in comparison with Exhibit 24 sponsored by Dr. Shaffner. It shows the capitalization of Tennessee as of February 29, 1960 on a consolidated basis. The differences between the items of capital shown on Exhibit 31 and the items shown on Exhibit 24 are as follows:

Dr. Shaffner showed preferred stock at $182,417,500 amount of $754,355,739 whereas I show long term debt at

$737,664,739. The difference is due to the fact that in my exhibit there has been eliminated

(End of Page 6)

short term notes in the amount of $16,691,000. Since these notes are due within one year they have been excluded consistent with the exclusion of long term debt due within one year.

Dr. Shaffner showed preferred stock at $182, 417,500

whereas I show $158,489,286 or a difference of $23,928,214. This difference is composed of three items: one, I have eliminated preferred stock to be retired within one year in the amount of $337,600; two, I have classified as common equity the 4.50% second convertible preferred stock outstanding as of February 29, 1960 in the amount of $19,264,600; and, three, I have deducted the issuance expense applicable to the remaining preferred stock in the amount of $4,326,014.

Dr. Shaffner showed common equity in the amount of $377,967,773 as compared with the common equity which I show of $401,707,519, a difference of $23,739,746. This difference is comprised of the following items: Dr. Shaffner deducted $5,208,000 capital stock expense from common equity. This figure is inappropriate inasmuch as it represents the balance as of December 31, 1959, rather than February 29, 1960. Furthermore, almost the entire amount of this item is related to preferred stock and not to common stock. I

deducted from common equity the actual amount related to common stock as of February 29, 1960 of $107,486 which was applicable to the 1,600,000 shares issued in February, 1960. I reflect the $19,264,600 of 4.5% second convertible preferred stock as common equity, and have deducted from common equity the remaining

(End of Page 7)

issuance expense related to that series in the amount of $625,368. Page 2 of Exhibit 31 shows the details of the reconciliation I have been discussing.

The balance of the exhibit is self-explanatory, the lower part of page 1 being inserted solely for comparative purposes with Exhibit 24.

Q. Does the long term debt shown on Exhibit 24 and

Exhibit 31 include debt of subsidiary companies of Tennessee? A. It does.

Q. Is any of this debt guaranteed by Tennessee? A. No.

Q. I show you Exhibit 32 and ask if that was prepared by you or under your direction? A. Yes, it was.

Q. Please give a brief description of that exhibit. A. That exhibit shows thed etails of the long term debt and preferred stock reflected in Exhibit 31. It will be noted that long term debt in the amount of $16,230,950 relates

to East Tennessee Natural Gas Company. That debt is the responsibility of East Tennessee alone and is not guaranteed by Tennessee. It will be noted too that the debt had a cost of 4.74%. There is also included in the long term debt $22 million of bank loans made to The Cumberland Corporation at a cost of 5.50%, $1,500,000 of loans to The Bay Petroleum Company, $35 million of bank loans made to Midwestern Gas Transmission Company at an annual cost of 5.07%, and other debts of other subsidiary companies

(End of Page 8)

whose activities are not associated with the sale and transmission of natural gas by Tennessee. In this connection I would like to point out that Midwestern Gas Transmission Company is in the process of selling $60 million of first mortgage pipeline bonds and it is obvious that the cost of this debt capital will be in excess of 5.07% and will far exceed the average cost of long term debt to Tennessee. I do not believe that this debt of subsidiary companies, some of which are not regulated and others subject to regulation as separate and distinct pipeline companies, should be included in the cost of capital to Tennessee for the purpose of fixing rates and charges relating to the sales by Tennessee.

Q. I show you Exhibit 33 and ask if that exhibit was prepared by you or under your direction? A. It was.

1505

Q. Please explain that exhibit briefly. A. That exhibit shows the capitalization of Tennessee on a non-consolidated basis as of February 29, 1960. The common stock equity includes the balance of the 4.50% second convertible preferred stock in the amount of $19,264,600.

Q. I show you Exhibit 34 and ask whether that exhibit was prepared by you or under your direction? A. It was.

Q. Please explain Exhibit 34.

(End of Page 9)

A. That exhibit shows the capitalization of Tennessee on a non-consolidated basis as of March 31, 1960, the latest date for which figures are available, with the balance of the 4.50% second convertible preferred stock in the amount of $17,463,700 included in common equity. I might add that during April, 1960 an additional $1,768,500 of the 4.50% second convertible preferred stock was converted into common stock. Reflecting the complete conversion of this series we would have 25,644,435 shares of common stock outstanding as of March 31, 1960. It will be noted that, based on our capitalization as of March 31, 1960, a 7% overall return would produce only 12.52% on our common equity.

Q. I notice that in Exhibits 31, 33 and 34 you have not included deferred Federal income taxes in long term debt as was done by Dr. Shaffner in his Exhibit 24. Is that

1506

correct? A. That is correct. Obviously deferred Federal income taxes arising from liberalized depreciation are not a part of our long term debt.

Q. I show you Exhibit 35 and ask whether that exhibit

was prepared by you or under your direction? A. It was.

Q. Please explain Exhibit 35. A. That exhibit shows the details of the long term debt and preferred stock reflected in Exhibit 34.

(End of Page 10)

Q. At page 1348 of the Transcript Dr. Robertson testified that if he applied his 5.445% revised cost of capital to the total capital of Tennessee at the end of 1959 of $1,206,162,000, he would obtain a figure that approximated the net operating income of the company for 1959. He suggested that this checked his answer as to the cost of capital to the company. Have you read that testimony? A. Yes, I have.

Q. Do you agree with it? A. No. The mathematics are correct; the answer is wrong in substance.

Q. Please explain why the answer is wrong in substance. A. There is a basic error in relating net operating income to total capital employed in the business. Net

operating income in our financial statements relates only to plant, both regulated and nonregulated. Therefore net operating income should be related to average net plant (exclusive of transmission work in progress) plus working capital, and not to total end-of-the-year capital.

Q. Have you made such a calculation? A. Yes, I have. The net plant averaged for the year 1959, exclusive of the work in progress, amounted to $995,449,000. The net operating income of $65,654,000 reflected in the financial statements of Tennessee for the year was 6.60% of this base. The inclusion of working capital would reduce this percentage slightly.

(End of Page 11)

Q. Then the actual earnings of Tennessee on its average net plant, exclusive of work in progress, and of working

capital was 6.60% in 1959 and not 5.445% as testified to by Dr. Robertson. Is that correct? A. Yes, that is correct.

Q. If these adjusted figures were used would Dr. Robertson's method of checking the reasonableness of his 5.445% cost of capital be, in your opinion, a valid method? A. No. His method, in my opinion, instead of determining the answer was merely an arithmetical coincidence.

Q. You have previously testified to the increase in cost of borrowed capital and preferred stock capital since

1508

1950, have you not? A. Yes.

Q. Do you know what has been the trend in earnings-price ratios since 1950? A. The trend of earnings price ratios for natural gas pipeline companies, industrial companies and electric utilities has generally been downward since that time. This is illustrated in part by the graph on page 18 of Exhibit No. 13.

Q. Dr. Shaffner testified, beginning at Transcript page 1008, that the cost of debt capital and the cost of equity capital have moved in opposite directions. Do you agree with that conclusion? A. No. A more correct statement would have been that the cost of borrowed capital and the cost of preferred stock capital have

(End of Page 12)

increased, and that earnings-price ratios have decreased. It is a fundamental error, however, to consider earnings-price ratios and so-called cost of equity as synonymous. Cost as applied to common stock equity capital is a misnomer. Actually, there is no such thing as "cost of equity capital." The common stockholder is like a residuary legatee. He gets what is left after paying interest on the borrowed capital and dividends on the preferred stock capital. He gets this residue not for one year only, but for all the time in the

1509

future during which the corporation makes money. If there is such a thing as cost of equity capital, I believe such cost can only be determined retrospectively as consisting of the dividends paid on the common stock capital during the corporation's existence. Certainly, earnings-price ratios, which measure the mathematical relationship of the price of stock at a given time to current earnings or to the last reported earnings, do not possess the characteristics of a "cost."

Q. Does the earnings-offering price ratio represent or measure the "cost of equity capital"? A. No. It is the relationship of the last reported earnings to the sale price of a new issue of stock. This ratio does not possess the characteristics of a cost.

Q. Do the earnings at time of offering have anything to do with price? A. Yes, they do. In the normal situation where a business is growing the dollars of earnings on common equity represent a floor as

(End of Page 13)

to expected earnings and therefore they do have an effect on the price. But past earnings are only one of the factors entering into determination of price. Future prospects are more important, although past earnings are helpful in predicting the future. In other words, neither earnings-

price ratios nor earnings-offering price ratios measure investor expectations.

Q. Is it logical or sound to apply an earnings-offering price ratio, adjusted upward for cost of flotation, in determining the amount to be allowed on the common equity in fixing the overall rate of return? A. It is illogical and unsound in my opinion, and constitutes circular reasoning. I would like to explain why it is circular reasoning by the

use of a practical illustration. In February, 1960, Tennessee sold 1,600,000 shares of common stock at $34.50, with net proceeds being $32.75. On the basis of reported earnings of $1.93 a share for the twelve months ended December 31, 1959 the earnings net offering price ratio was 5.89%. If this percentage, which is derived from market price per share, is applied, not to the market price, but to the book value per share of $15.37 at February 29, 1950, which is immediately following the sale, it would result in computed earnings of 91¢ per share. On the basis of a reasonable payout ratio, the dividend rate would be 65¢ a share as compared with the rate of $1.65 a share which had been announced prior to the time of the sale. Obviously a reduction in the dividend rate from $1.65 a share to 65¢ a share would have a revolutionary effect on the price of the stock. Such a drastic reduction in earnings and dividends would seriously impair investor confidence

in the stock so that the decline

(End of Page 14)

in the price of the stock would be substantially more than the proportionate decrease in earnings and dividends. That is why I say the method reflects circular reasoning: We start with the ratio of earnings to market or offering price of stock, apply that ratio to the book equity thereby changing earnings and price, which changes result in a new ratio.

Q. In your opinion, will investors continue to buy natural gas pipeline common stocks regardless of what the Federal Power Commission does to earnings, as Dr. Shaffner testified at Transcript page 1134? A. I presume that as long as there are some earnings, or, to be more accurate I should say prospective earnings, common stock could be sold. But if prospective earnings are inadequate, it would impair the financial integrity of the company and among other things, would result in higher cost for senior capital.

Under these conditions service suffers, employment declines and when the common stock fares badly, credit is impaired and all classes of capital of a company or an industry will suffer. In other words, we would create a situation similar to that of railroads which cannot advantageously issue debt securities and which certainly do not find it feasible to sell common stock. In this

connection, I would like to point out that security analysts consider the attitudes of regulatory commissions toward rate of return in appraising stocks of companies subject to regulation. I would also like to point out that costs in most industries include varying amounts for research. This is not true to any appreciable

(End of Page 15)

extent, however, in the case of railroads and electric utilities. In railroads the squeeze on profits and thereby on expansion has reduced or eliminated research expenditures by either carriers or manufacturers and thus has contributed to the undesirability of their securities as an investment medium. In the case of electric utilities, much of the research is provided by the principal manufacturers of equipment, and the cost of the research finds its way into the rate base as an element of the cost of plant. In the case of gas pipeline companies, capital funds for research plant and equipment must be provided by the pipeline itself. The greater risk attendant with such research and development should be recognized in the determination of the level of an adequate rate of return. Research expenditures in increasing amounts must be made by the natural gas pipeline industry if the industry is to be kept technically abreast of its competitors. We must compete with the electric industry and others for capital. We must also compete with them in

1513

technical research if we are to compete with them successfully for capital. To compete with them, we require adequate earnings on our common equity.

Q. There is testimony in this record by Dr. Robertson at pages 1411-1412 that investors purchase utility stocks primarily on the basis of current yields. Do you agree with this view? A. To the extent that the statement relates to yields in the technical sense, that is to say, the relationship of dividends to price, I emphatically disagree. It seems obvious to me that it is wholly

(End of Page 16)

erroneous to conclude that investors in common stocks of utilities are purchasing such stocks solely for current yields. I am sure that investors did not buy Colorado Interstate stock with an average yield in 1959 of 2.5% and Tennessee's common stock with an average yield in that year of 4.1%, solely for such low yields, when they could have purchased gilt-edge triple A utility bonds and U. S. Bonds with higher yields. Actually they are buying for the future, and as they properly judge the future by the past, they anticipate higher future returns. However, if the statement relates to the actual dollars of earnings as distinguished from technical yields, then I agree in part with such statement. Certainly current earnings and past earnings are

1514

employed in studying trends. This is standard procedure in analyzing securities. The prospects of growth are most significant in the appraisal process and current and past earnings are most helpful in measuring these prospects. But to hold that investors are buying utility stocks on the basis of current yields in the technical sense is completely erroneous in my opinion.

(1514)

Q. You have testified earnings-price ratios and earnings-offering price ratios are not determinative in arriving at the fair allowance for common equity. What in your opinion is helpful? A. I like to emphasize the test of practicality. The emphasis, I believe, should be upon past practices of the Commission. Tennessee was born and reared under FPC regulation. It has sold more than a billion dollars of securities to finance expansions approved by the FPC

(End of Page 17)

as being economically feasible. Commission policies and practices with respect to rates of return have met generally with wide investor acceptance. Continuation of this policy, giving adequate recognition to the increase in cost of capital, will insure financial soundness and enable the company to continue to attract capital on reasonable terms and conditions. Any reversal of that policy or any failure to recognize the obvious increase in cost of capital would

1515

be harmful to the company, its security holders and ultimately to the public it serves.

. . . . . .

1516

Cross-Examination

By Mr. Spalter:

Q. I would refer you to page 1 of your testimony, Mr. Symonds, wherein, close to the bottom, you state "There is nothing special in the 1941-43 period which is equally applicable to all of these industries."

Do you have that? A. I do.

Presiding Examiner: What page is that?

Mr. Spalter: Page 1, at the bottom.

The Witness: Fifth line from the bottom.

By Mr. Spalter:

Q. Are you aware that Standard and Poors Corporation considered the 1941-43 period to be suitable as a base period for all their stock price indexes when they revised

those stock price indexes in March of 1957? A. I knew they took a date about that time. I think I would have to say "yes" to that. But my statement still holds that I think there is nothing special about it except it happened to be an available date.

Q. Then you are not familiar with the statement by Standard and Poors in their description of the method used in the computation as set forth in their 1960 edition of the Statistics of the Security Price Index Record?

Mr. Werner: Do you have that here?

Mr. Spalter: I have the quote, I don't have the volume at the moment.

The Witness: I am not familiar with it. I know to my knowledge they have made several such revisions over the life of these indexes over the last 50, 60 years. It is not unusual for them to do so.

By Mr. Spalter:

Q. You are not familiar, then, that the 1941-43 period was adopted as the current base, as equal to 10, the index figure was 10 for that period? A. The index figure was 10?

Q. For the stock, yes, for Standard and Poors.

Mr. Werner: You mean 10 instead of 100, is that what you mean, Mr. Spalter?

Mr. Spalter: Yes.

1518

The Witness: No, I am not.

By Mr. Spalter:

Q. As a matter of fact, as shown in our Exhibit 20? A. I have studied your Exhibit 20. I did not--

Q. The legend in the lefthand corner if you will notice. A. I have found it.

Q. Are you aware that that level or index was the close approximation of the average price level of all stocks listed in the New York Stock Exchange in that period, 1941-43? A. I would have to say I was, but you see what I am saying here isn't going to the mechanical makeup of that index. What I am saying here is that the year 1941-43, which was in the middle of the war, did not have the same applicability except as a mathematical computation to any particular group of stocks, there were very few gas stocks in existence in 1941.

I mean there were distributing companies, a few pipelines, but not very many. We weren't in business at that time.

Q. Well, you made a statement about the mechanical use. Am I to understand from what you are saying that you disagree with Standard and Poors' selection of the base period for their indexes?

1519

A. Oh, no, I don't disagree with it. They could take any base period, but what I am trying to point out is supposing you had taken during the war period the steel stocks or copper stocks, those stocks would have been at very high levels proportionately to other stocks which were not benefitting from war sales. That is a difference—I am talking to the impact of it and the applicability going into a trend over a period. I am not questioning the statistical accuracy of Standard and Poors.

For instance, if you took copper stocks in 1941-43, Mr. Spalter, you might have a complete downward trend, and it would be a complete fiction, and yet two or three years later they may have hit bottom and started up again.

Q. Well, I thought you agreed a moment ago that the index used by Standard and Poors of the years 1941-43 was approximate and a close approximation of the average price level of all the stocks on the New York Stock Exchange, not picking any one industry? It is an index figure of all stocks on the market. A. I will accept that, I will accept that, of all stocks, but then they start to vary differently, not from that date to 15 years hence, but every year from that time forward.

. . . . . .

1543

Q. Now, you have in your capitalization also considered the 4.50 percent convertible preferred as common equity on that page 2 of Exhibit 31, haven't you? A. Yes.

Q. Now, I think in your testimony you point out that—A. My rebuttal testimony?

Q. Yes, on page 10, that another $1,768,500 of that second convertible preferred was converted in April of this year? A. That is correct.

Q. Is that the general pattern of conversion of that preferred stock? A. Yes, it has been very steady at that rate, and I think it will continue at that rate until we force conversion by issuing a call. The stock is selling in the present market between 120 and 130. I haven't seen a recent quotation. I think we could force the call almost any time we want to.

Q. But on this pattern of conversion it will be at least another ten months before all of this stock is converted, that is ten months from May, 1960? A. I think that is fair, if we don't do something about it.

Q. And that should bring you down to a time consider-

ably beyond the test period in this case; isn't that so? A. We don't know when the case is going to finish.

1544

Q. You know the test period. A. Well, I would—your answer is right.

Q. Are there any other convertible preferred that are being converted at the present time? A. There are two other issues of preferred stock. There are no preferable conversions in connection with them. In the 4.72 percent convertible preferred stock out of 440,000 shares originally issued, 35 shares have been converted: I don't know who wanted to do that, but they did. Of the 5 percent series, out of 295,178 shares originally issued, 25 shares have been converted. But it is because of the very fast actual conversion of the 4.50 percent preferred that we feel this classification is a proper one to make.

Mr. Werner: You mean classification as equity, common equity?

The Witness: As equity, yes.

By Mr. Spalter:

Q. You are not assuming a similar pattern of conversion of the 4.72 and the 5 percent within the next ten months? A. Not unless I can do something to get my earnings up to the point where they would be desirable to convert them.

I might say, Mr. Spalter, the conversion ratio on the two series we last spoke about are much less attractive than on the 4.50.

. . . . . .

1563

By Mr. Spalter:

Q. Turning to page 16 of your testimony you there refer to capital funds for research plant and equipment to be

provided by the pipeline company, itself. Can you set out for the record some nature of the research plant and equipment and research being done by Tennessee Gas Transmission? A. You mean now or what is contemplated if we have the funds for it, or both?

Q. Well, what is the nature of your testimony? That there has been research going on? A. We have done a certain modest, very modest, amount of operational research with the idea of reducing costs, improving construction practices. That is relatively a modest item.

1564

I refer here primarily to the fact that if we are not skinned down, if there is a reasonable continuity of policy with this Federal Power Commission, it is our intention, and we have consistently felt that we should go into areas of research requiring funds over and above those provided out of operation.

For example, we may as both a part of the social concept of fuels, go into a gasification program which might require substantial capital funds. Those funds would have to be provided by stockholders. They might or might not show earnings, and there might or might not be a profit or be a loss.

I think any business going forward would have to contemplate that type of investment as well as that type of operational expense. Certainly, the research expense is returnable if properly made through charges to operation in any test period. The capital charges wouldn't be properly made. I am calling attention to the fact that needs for that type of investment are going to approach the gas companies, particularly Tennessee, in the near future very much more rapidly than they have in the past as the increasing price of gas in the field makes those projects more closely feasible.

Q. On the other hand, isn't this the first time in this

record that you have referred to these proposed research expenditures and research programs that you may enter into?

1565

A. I think I would have to say that it would be, in my opinion, implied all through my testimony. Whether it has been spelled out in as quite the detail here, I would have to say it is not.

The reason I mention it here is I want to be sure that it is understood and we are not put on sort of a short choke that we are unable to do the things that are socially, economically, and if I may say so politically necessary.

Q. Your language is descriptive, Mr. Symonds, but I don't know that you have yet indicated what this research would amount to, and how it would benefit the consumer to the extent that you are given— A. Well, let us assume—

Presiding Examiner: Just a moment, have you finished your question?

By Mr. Spalter:

Q. —to the extent you are given a higher rate of return in order to enter into such a program. A. Let us assume we were given a rate of return that enabled us to pay our dividends and have modest accumulations of earned surplus over and above that. Then I know for one thing we would go into a gasification program with Consolidation Coal Company looking towards seeing what research at the operating level, I don't mean test tube or pilot plant research, I mean operating research, would do to put, let us say, an

1566

all-time ceiling on gas prices in the field.

But you can't do that if you are completely broke. That is why I feel it is important to consider it in the

context of rate of return. In other words, if we have to have, let us say, 6½ percent rate of return to barely pay our dividends, if we had seven, use the example, there would be a margin between there that we could afford to risk and still not impair our capital stability in these fields which would mean so much to the ultimate consumer.

Presiding Examiner: What do you mean by the gasification program?

The Witness: Well, we have had continuing discussions, Mr. Zwardling, for over a year, with the Consolidation Coal people looking to a plan to gasify coal in eastern Ohio, combining that with our pipeline stream for delivery under the present tariffs. There might have to be some modification of words in those tariffs, but substantially in satisfying the fuel demands just as if we bought gas in Louisiana. It is a risky process, we might lose money on it. I feel we should have some margin to take care of it.

Presiding Examiner: Thank you.

By Mr. Spalter:

Q. Is it your testimony that a 7 percent rate of return would enable you to make these modest accumulations of reserves that you refer to?

1567

A. Financial reserves.

Q. Financial reserves, in order to enter on that program? A. Yes, because you are starting with about 50 million dollars, when you start into one of these things. So the word "modest" has to be taken in both contexts. Maybe the word "appropriate," or "adequate" would be better than "modest."

I don't want to say modest in one sense, and then have you say it is going to be a lot of money in another, because the two are in balance.

Q. Let us put a figure on it, by modest accumulation

you mean a 50 million dollar financial reserve? A. We might hazard that much money in this program. Whether it all came from a reserve, or whether it came partly out of operating, that would be the financial risk that would be involved.

Q. Are there any other research programs or expenditures that you had in mind when you testified at page 16, other than this gasification? A. No, the rest of it we have been continuing, and I think they are adequately covered with the operating charges which have been, and we don't see any variation in those. There are many minor items that we take care of in our laboratory in Houston.

1568

Q. You mean technological advances? A. That is correct.

* * * * * * * * * *

1571

By Mr. Freeman:

Q. Exhibit 36, Mr. Symonds, merely adds to your Exhibit 30 the percentage increase of Tennessee Gas Transmission Company's stock from the years shown thereon to 1959 based on the average market price of Tennessee's stock in those years as set forth in Exhibit 21, page 29, column (h). In addition, on line 8 of Exhibit 36, I have recomputed the average to include Tennessee Gas Transmission Company, and on lines 9 and 10 I have shown the rank of Tennessee Gas Transmission Company and the rank of the electric utilities.

Mr. Werner: I am going to wait a minute, or two, perhaps to see what kind of question he is going to ask about this exhibit. But as I glance at it now it would appear—some sort of work papers underlie this exhibit, and I cannot—

Presiding Examiner: Before you get to that, I would like Mr. Freeman to explain for me in some summary fashion—you went a little fast for me—I don't understand your explanation how you have used market prices. Will you make that a little more plain?

Mr. Freeman: Yes. I am taking the average market price for each year as shown in Dr. Shaffner's Exhibit 21, page 29, column (h), and I have compared the years shown to the year 1955 just as Mr. Symonds has compared similar years for the Standard and Poor index.

1572

Presiding Examiner: Mr. Freeman, bearing in mind the fact you are not here following the usual practice of presenting a witness who would explain clearly how he prepared this exhibit, and what it does, will you take a dry run and looking at Exhibit 36 take the column 2, line 1, the figure 700, which appears under the year 1946 for Tennessee Gas Transmission Company—I think it would be even better to take something which is comparable to what appears on Exhibit 30. Let us take the 11 natural gas distributors, for example, on line 4, and you see the figure 122 for the year 1946. Now, how did you get that figure?

Mr. Freeman: I merely copied that from Mr. Symonds' exhibit.

Let me make it clear: Everything on this exhibit is on Mr. Symonds' Exhibit 30. The only thing I have done is I have added line 1, which is Tennessee Gas Transmission Company, and given the percentage increase of its stock from the year shown to 1959. Lines 2 through 7, the numbers are identical to Mr. Symonds' exhibit. I have omitted the years before 1946 because Tennessee was not selling stock on the market. These are all based upon numbers that are in the record.

Presiding Examiner: Well, then, would you explain why

is it that your heading refers to market price? I just don't understand why your heading is different from Mr. Symonds' heading.

1573

Mr. Freeman: Because the percentages that I got from the Tennessee Gas Transmission Company I used as the basis of it the average market price of the Tennessee Gas Transmission Company's stock as it is shown on Dr. Shaffner's Exhibit 21, page 29, column (h).

Presiding Examiner: All right.

Mr. Freeman: In other words, the No. 700 for the year 1946 merely is a numerical relationship of the price of Tennessee Gas Transmission Company's stock in 1959 as increased over the price of that stock for the year 1946.

Presiding Examiner: Now, before we proceed with this, do any of the parties have any other clarifying questions to understand more fully Exhibit 36?

I hear no response.

By Mr. Freeman:

Q. Accepting the figures on line 1 for Tennessee Gas Transmission Company, subject to check, Mr. Symonds, will you not agree that the price of Tennessee Gas Transmission Company's stock in 1959 has shown a greater percentage increase, year by year, than has the index of the six natural gas pipelines shown on your Exhibit 30?

Mr. Werner: Mr. Examiner, I am going to object to any questions on this exhibit. It would appear to me that this sort of an exhibit is attempted rebuttal exhibit of an exhibit of Tennessee, namely, Exhibit 30.

1574

Now, there has been no one to explain, for example, line 1 as to where those figures were obtained. I don't know whether those figures are correct, or who is going to

vouch for the accuracy of the figures contained in line 1. If a witness were to present such an exhibit we might very well want to cross-examine him as to the significance of starting with the year '46, for example, which is the first year in which Tennessee was in business.

But this sort of an exhibit in aid of cross-examination, or purportedly of cross-examination, I think, is really a sur-rebuttal, so to speak, exhibit, and not an exhibit in aid of cross-examination.

Presiding Examiner: Well, I think I would put it this way: In Mr. Symond's testimony he took the position that he was critical of the significance or weight which should be attributed to the staff's Exhibit 30, his theory being that it was not meaningful to simply compare index numbers for the entire period 1943 to 1959, but that a meaningful study would have to look at the year by year figures for each of the categories shown in Exhibit 30.

Now, I take . . Mr. Freeman, that what you want to establish here in your interrogation of Mr. Symonds is that if we were to make a year-by-year study, that in your view such a year-by-year study should in fact reflect some of the other types of year-by-year data which you set forth in your

1575

Exhibit 36, but which are not set forth in Mr. Symonds' Exhibit 30, is that it?

Mr. Freeman: That is correct, Your Honor.

Specifically, as to Tennessee Gas Transmission Company, which is already in the record in the reference that I gave in the title to my exhibit.

Presiding Examiner: Well, if Mr. Freeman were to put that type of question to Mr. Symonds without using an exhibit such as Exhibit 36, I would not regard that type of question as objectionable, although if with respect to any specific question that was not clear as to what was

the basis for the assumptions Mr. Freeman wanted to make in that question, the parties would have a chance, then, to explore that.

In other words, why don't we proceed with this until we see some specific problem, where you feel, Mr. Werner, that an assumption made in Mr. Freeman's questioning is not clearly supported here? In other words, I am thinking in terms of whether we will follow one of two alternative courses here. Let us assume that on Exhibit 36 there is a substantial amount of data as to which you do not raise any question that it is not clear as to where it is obtained, or it is not clear that it is correct data, or whatever, as to those matters are we going to have to go through oral questions, question by question, or could we expedite it by using a tabulation such as Exhibit 36?

1576

Mr. Werner: My problem is this: Mr. Freeman asked Mr. Symonds to accept certain figures subject to check. Now, he checks them, let us say, at his leisure next week—

Presiding Examiner: I wouldn't accept that. For example, on the figures which appear on line 1 of 36—

Mr. Werner: I don't know where those figures came from, and I don't know any exhibit in this proceeding that reflects those figures.

Presiding Examiner: Perhaps he could tell us where he got those figures, and maybe it will turn out that there is no problem.

Mr. Freeman: I appreciate the opportunity. I might add these are the same type questions that I put to Dr. Shaffner.

It appeared to me that it would simplify matters if I presented the numbers to the witness so that he would have them before him. But, Mr. Symonds, if you would refer to Exhibit 21, page 29, column (h), I will ask you if

you would accept subject to check the fact that the average market price of Tennessee Gas Transmission Company's stock in 1959 had increased over the year 1946 by 700 percent?

Mr. Werner: I will have to object to any question that asks the witness to accept something subject to check.

Presiding Examiner: Mr. Werner, let me ask you this: If you look, yourself, at Exhibit 21, page 29, which shows the data with respect to Tennessee Gas Transmission Company—

1577

well, first, are you raising any question as to whether the data shown as to market prices of Tennessee common stock year by year on page 29 of that exhibit is not accurate data?

Mr. Werner: I assume that they are accurate. I don't know that they are. I assume that they are.

Presiding Examiner: If it is merely a matter then, of making a mathematical calculation to determine the percentage increase in the common stock price from 1946 to 1959, is there any problem about that?

Mr. Werner: No. But if he wanted to make a mathematical computation he should have had a witness do it.

Presiding Examiner: Just how? Will you repeat, Mr. Freeman, where you got the 700 figure, what mathematical computation that you made?

Mr. Freeman: It is merely $4.31 for 1946 divided into the number $34.44 for 1959.

Presiding Examiner: I don't see any problem. We do that with witnesses all the time.

Mr. Littman: If that is the case, Mr. Examiner, then why don't he put this in his brief and argue it from that? He had the opportunity to serve this on us in advance.

Presiding Examiner: I haven't had the chance to see what he wants to ask.

Mr. Litman: What he wants to do, I am sure, he wants this witness to support this exhibit so it can be supported

1578

as an evidentiary fact and put it into the record.

Presiding Examiner: I am going to let him proceed until I see something more objectionable.

Go ahead.

Mr. Freeman: I believe there was a question before the witness.

Presiding Examiner: Why don't you start a question again.

By Mr. Freeman:

Q. Accepting the figures on line 1 as to Tennessee Gas Transmission Company, subject to check, will you not agree that the price of Tennessee Gas Transmission Company's stock in 1959 has shown a greater percentage increase year by year than has the index of the six natural gas pipelines shown on your Exhibit 30? A. No, because, Mr. Freeman, I have made the first computation you referred to in argument with counsel a minute ago, and the first one I don't check out at all.

Q. What is your answer? A. It comes out about 800 percent.

Q. It is 800, but it is a 700 percent increase, Mr. Symonds. A. I divided 431 into 3444 and I got, almost right on the head, 800.

Q. I agree with you, but isn't that a 700 percent

1579

increase?

Mr. Werner: I object, Mr. Examiner. It shows the difficulty that you get into in asking a witness to support somebody else's exhibit.

Presiding Examiner: No, Mr. Werner, I don't see why this is so complicated.

I just want to make sure that we clearly understand what Mr. Freeman is talking about.

I take it what you are suggesting, what your Exhibit 36 is meant to indicate in terms of the numbers shown on line 1, is that the average market price of the Tennessee common stock from the year 1946 to the year 1959 increased by 700 percent?

Mr. Freeman: That is correct, sir.

Presiding Examiner: Assuming for the purpose of this discussion that the market prices for Tennessee's common stock shown on page 29 of Exhibit 21 are correct, is there any doubt about that proposition, Mr. Werner?

Mr. Werner: Well, if page 29 of Exhibit 21, assuming it is accurate, shows that to be a fact, it is a fact.

Presiding Examiner: Yes. Well, I don't see the problem at this point.

Mr. Littman: Then, where is the cross-examination? What do you ask him when you get through?

Presiding Examiner: You haven't given Mr. Freeman a

1580

chance to show us.

Mr. Littman: He can't ask any questions.

Presiding Examiner: I have already ruled on that.

Go ahead.

Mr. Littman: I would like to know just what his question is.

Presiding Examiner: I am awaiting eagerly to hear the question. I have overruled the objection.

Mr. Littman: There is no question, apparently.

Presiding Examiner: Go ahead, Mr. Freeman.

By Mr. Freeman:

Q. Mr. Symonds, will you agree with me that subject to check of these figures on line 1 that they do show that

year by year Tennessee Gas Transmission Company's stock has increased by a greater percentage than has the index of the six natural gas pipelines shown on Exhibit 30?

Mr. Littman: I object to that question.

Presiding Examiner: Objection overruled.

The Witness: As you have made these computations, and without vouching at all for the accuracy which I understand is inherent in your question, I think we have done somewhat better than the average, but partly because 30 percent of our gross and net at an increasing amount since 1951 has come from unregulated activities.

By Mr. Freeman:

1581

Q. For whatever reason, the increases year by year in Tennessee Gas Transmission Company's common stocks have been greater than the average of six natural gas companies? A. If they hadn't I wouldn't be here, I would have been fired.

Q. But the answer, with or without the qualification— A. The answer is "yes," and that reason goes with it, too.

Q. You also agree, will you not, that Tennessee Gas Transmission Company's stock has shown a greater percentage increase over every since 1946 with the exception of 1948 than has the average of all the industries shown on your Exhibit 30? A. Say that again.

Presiding Examiner: Read the question.

(Question read.)

The Witness: If you mean that the figures in line 1 exceed year by year the figures in line 8, yes. I don't know what kind of an average it is, but I will agree that line 8, as in your exhibit, is less in each case, than line 1, except in the year 1958.

Mr. Werner: You said '48 previously.

Mr. Freeman: I was in error. It should be '58. For every year except 1958.

By Mr. Freeman:

1582

Q. You also will agree, will you not, that Tennessee's stock has shown a greater percentage increase over every year since 1946 than the electric utilities, except for the last two years, is that not—

Mr. Werner: You mean the average of the electric utilities?

Mr. Freeman: That is correct. The 30 electric utilities shown on your Exhibit 30.

The Witness: Yes, and for the same reason.

By Mr. Freeman:

Q. And for the year 1957 the increase in Tennessee's stock in 1959 over '57 was 35 percent, and it was 38 percent for the electric utilities; is that correct? A. That is right.

Q. Therefore, Mr. Symonds, the statements you made in your prepared testimony relating to the significance of the year by year showing in your Exhibit 30 would have to be qualified as to Tennessee Gas Transmission Company? A. Certainly not, certainly not, because if you are going to take one company and compare it with averages, I want the right to take a company out of each of the other groups and compare it to Tennessee, and I will do a better job in showing how badly we have done.

I want to take one company out of each other group if you are going to take one company out of the natural gas

1583

group and reason to this end; I want the right to take one industrial, one natural gas distributor, one railroad, one electric utility.

(1583)

I happen to be a director of General Telephone, and I know they have done exceedingly better than Tennessee has, and I am sure it is one of the companies included in this index.

Q. You will agree that Tennessee has done better than the average of all of these groups? A. Done better than the average, yes. But I don't think it proves the point because if you are going to take one company and compare it to the averages in other groups you have to compare it to at least one other company in that group to make it a valid comparison.

. . . . . .

1605

By Mr. Stewart:

Q. Mr. Symonds, in the broad classification of common stocks as between growth stocks and income stocks, isn't it true that, utilities are normally placed in the income stock classification? A. No. That was the usual concept, but I think with the dynamic growth of the economy of the country in the last 15 years there has been a great deal of investment thought that utility stocks are basically fundamentally growth stocks. So I would have to characterize them today as having more of the characteristics of a growth opportunity than income. They also have the advantage of carrying income with them as well.

Q. I am speaking comparatively, of course, here. You have to compare them with other stocks available. Would you say on that basis they are still growth stocks?

1606

A. Yes, I would. I mean they don't have the same growth, let us say, as electronics which are mercurial, which may go up one day and way down the next, depending on technological advancements, but they would certainly be growth stocks compared to steels, packing plants, coppers,

or other items which grow with the economy and the use of whose products grow with the economy.

I think the utilities would definitely be characterized by that growth synonym or adjective.

Q. Then you think it is no longer true that people buy utilities more for income than for growth? A. I will agree with you that they buy them for both, but I would say that today they buy them equally as much for growth as for income.

I know that is a new concept that has been developed investmentwise in the last 10 years, and it has been most clearly brought out in the growth of utility stocks like in the Florida area, where the growth of the population has exceeded the national average, and where the growth of the utilities have likewise exceeded.

Q. Well, of course, you can point out specific areas and specific utilities which have grown very well, as you mentioned General Telephone yesterday, I believe, but in your opinion that has been significant enough in the overall picture to change the situation?

1607

A. I believe it has.

Q. Well, if the utility simply earns its dividends, plus a normal amount to be passed on to surplus, and does that consistently, and, of course, if it can also re-invest that surplus to produce more earnings, then that normal process will result in growth, will it not? A. To that extent. Whether that would exceed the national average of the growth in gross national product, I don't know. I would doubt if it would. I think you have to look in the future and certainly if Tennessee had grown only at the rate, let us say, of 30 percent of its earnings for reinvestment, it would not have had anything like the market acceptance that it has through its ability to go to the

market for capital. It has to look for prospective earnings, and thereby sell stock on the basis of those prospective earnings to maintain its rate of growth.

Q. When you are speaking of its rate of growth, what do you mean? Are you speaking now of the increase in the value of its common stock? A. No, I am speaking of increase in book value of its common stock, not market value. I am talking about growth in the sales, growth in revenues, and increase in book value of common stock.

Q. What I mean is, are you talking about the per-share or the growth in total assets of the company, for example?

A. Growth in total sales and total assets of the company.

Q. When you say on page 16 and page 17 of your prepared testimony that you disagree with Dr. Robertson that investors purchase utility stocks primarily on the basis of current yields, if the term "yield" is used in the technical sense, isn't your disagreement with Dr. Robertson pretty much on the question of whether or not the investor is considering price, current price, in relationship to those yields?

Mr. Werner: May I have that question read back, sir?

Presiding Examiner: All right, read the question, please.

(Question read.)

The Witness: No, sir; he is considering prospective price. I think the investor is considering prospective price every bit as much as he is considering current price, and that is where I disagree with Dr. Robertson. He is considering current price as though the utility is static. I believe the utility buyer is considering the trend and certainly that has been the case as far as Tennessee is concerned. They have been considering the trend as well as the current and im-

mediate situation. And when that trend would be interrupted, if it should be, then you destroy that basis of value.

By Mr. Stewart:

Q. Yes, but the point that I am asking about is whether

1609

or not you can get away from the current price as the basis of the investor's consideration of the stock. A. The investor buys the stock at a current price. The current price, which is, presuming it is a free market, is the appraisal of what is there today and also what he can anticipate on the basis of past trends. That is one of the primary reasons that people buy stocks is that they anticipate that the trend that has existed in the past will continue.

If you interrupt and break that trend you destroy that value.

. . . . . .

1610

Mr. Stewart: Yes. I mean if he is going to say, use the ratio of, on the one hand, of future expectations of earnings, or, on the other hand, of past experience of earnings, nevertheless one of the parts of that ratio will have to be current price.

The Witness: No, the current price is merely the expression of his appraisal or of the great mass of the market's appraisal of future prospects based on his analysis of past trends.

By Mr. Stewart:

Q. No. I mean he is going to determine whether or not he buys the stock.

Now, you say he is going to determine it on the basis of his expectations of future earnings. My question is, even if that is true he is going to do that on the basis of his

expectations of future earnings as compared with the price he has to pay today; right? A. And his expectation of future earnings is based on his appraisal of past trends, present price, present dividend, all those factors go into making up his appraisal of where it is going to go in the future.

If one of those things is destroyed, then you destroy the pattern, and there will be fewer buyers and more sellers and you will have a different thing.

On the other hand, if you should—for example, say the F.P.C. came out with a ruling in another case for a

10 percent rate of return, I would expect that to be a windfall, and the prices of all gas stocks in this case, let us say, go up.

On the other hand, if you come out and destroy the trend position, destroy the consistency of the pattern, then I think you are going to destroy those markets. But at any one minute the price is going to be the appraisal of the buyers and the sellers of all those factors, including future expectations, current price, but all of it related to past trends, I mean past trends and past policies which make those trends.

Q. I think what I am driving at is inherent in what you have said. A. I think we are on the same wave length.

Q. Yes.

For example, a man looking at a stock of "X" company today says that it just doesn't look good enough to me to pay $20 a share for, but if he could get it for $15, why, then, perhaps that would be good enough. A. That is right. And if he thought there was going to be a chance of it earning more, he might pay $25.

Q. It just appears to me that most of the argument on this point of rate of return as it applies to equity capital

depends upon what consideration and how much consideration you are going to give to this element of current market

1612

price, regardless of what you relate it to. Do you think that would be a fair statement? A. Current market price is the combination, the cumulation of all the buyers and all the sellers and one of the biggest factors on which he relies is past record.

* * * * * * * * * * *

Q. Mr. Symonds, yesterday you said that you expressed your opinion that if Tennessee were allowed a sufficiently high rate of return over and above what would be necessary for the payment of dividends that you might, I don't know exactly what word was there, enter into research looking toward gasification of coal. And I think that you stated that in your opinion it would be proper to do this out of surplus but not proper to do it and charge it as an operating expense. A. No, I don't think I said quite that. I said we would enter into such a program, that we had such negotiations on with the Consolidation Coal Company at the present time, that I felt that certainly the operating charges that would be going with that would normally be reflected in any rate proceeding, or any net, but that the investment that would have to be made, and it is a sizable sum, should be provided by stockholders, at risk, and therefore would

1613

require some fat on our bones.

I believe those were the expressions I used. If not, I certainly would rephrase it that way.

Mr. Werner: I know this wasn't intentional on your part, but I think you misstated what Mr. Symonds stated yesterday.

(1613)

You stated if he obtained a sufficient return to pay his dividends, he would do things, such and such. But that is not what he said. It was dividends plus.

The Witness: Dividends plus the ability to take a risk, with stockholders' money.

Mr. Stewart: I said in excess of the amount necessary to pay dividends.

The Witness: I think I heard Mr. Stewart say "ex," Mr. Werner.

Mr. Werner: I am sorry. I misheard you then.

By Mr. Stewart:

Q. Well, my question is fundamentally this: Do you see any essential difference between allowing the expenses of such experiments in the cost of service on the same basis as any other expense and using that as a justification for an increased rate of return and charging some of those expenses to earned surplus?

Mr. Werner: May I have that question?

(Question read.)

1614

The Witness: I don't think that in itself is justification for a rate of return. I think what I was saying is before you can take on experiments of that kind you have to be sure that you are financially sound enough, and by doing so, if the hazard fails, you will not impair your ability to pay dividends on your common stock.

Mr. Stewart: That is all the questions I have.

• • • • • • • • • • •

1615

Presiding Examiner: Is there a motion by the staff?

Mr. Spalter: Mr. Examiner, I presume when you ask the question whether this completed the evidence with respect.

to rate of return you were addressing it to all the parties, not only to Tennessee, and I assume by the lack of response by anybody else other than Tennessee that all the other parties have completed presenting any case with respect to rate of return that they seek to put into this docket?

Presiding Examiner: If there is any party who intends to offer any further evidence on the rate of return issue in this proceeding, he will have to speak up now.

1616

I hear no response.

Mr. Spalter: In the light of that fact, Mr. Examiner, I move that an interim order procedure be adopted with respect to the rate of return issue in this docket, namely, that the record on rate of return be considered an order issued thereon determining the fair rate of return for Tennessee Gas Transmission Company in this docket, and depending upon the rate of return, fair rate of return that is determined, if it is anywhere lower than 7 percent, that immediate refunds be ordered by Tennessee for the difference between the claimed or the proposed 7 percent rate of return and that determined by a decision rendered herein, and that for the purpose of that immediate refund all other presentation insofar as rate base and method of allocation between the zones be used as presented by Tennessee, but only for purposes of that refund without prejudice to any party to, at a later date, take issue with the rate base and the other items of cost of service or allocation as it comes up after the Examiner's decision in G-11980.

I would also like to move that for the purposes of that consideration of the record and determination of the fair rate of return, that the intermediate decision procedure be waived in accordance with Section 1.30 of the Commission's Rules of Practice and Procedure, and that the

(1616)

record herein on rate of return be certified to the Commission for direct

1617

decision by the Commission on this issue.

On the waiver of the intermediate decision procedure, we would reserve the right to file briefs and reply briefs on the issue, and would suggest, with respect to such briefs, that a 30-day period from today—that would make it about June 25th—for initial briefs, and ten days after filing of initial briefs for reply briefs. The briefs to be filed by the parties concurrently.

Presiding Examiner: Does that complete your motion?

Mr. Spalter: Yes, sir; those are the only two motions I have at this time.

* * * * * * * * * *

1618

Presiding Examiner: All right.

Now, in the off-the-record discussion there was some indication that there might be objections to Exhibit 15, which is the Tennessee allocation exhibit.

Do any of the parties have an objection to Exhibit 15? Mr. Reeder.

Mr. Reeder: Your Honor, the Consolidated Companies object to the admission of Exhibit 15 on the ground that it contains the company's allocations and that no evidence has yet been offered or submitted in justification of the company's allocation in this case.

Presiding Examiner: Thank you, Mr. Reeder.

Mr. Smith?

Mr. Smith: On behalf of the Columbia Gas System companies we object to the receipt in evidence of Exhibit 15, which is

1619

an allocation study sponsored by Mr. Davis, on the ground, among others, that the other parties, by the Examiner's ruling at page 302 and page 1241 of the transcript, were refused the opportunity to adduce evidence of cost allocation in this proceeding at this time. And, for that matter, for the balance of the hearing, if I understood the Examiner correctly.

In that regard, I would like to read a brief sentence from the Federal Power Commission v. Natural Gas Pipeline Company Case, 315 U. S. 575, at pages 584, 585, and I quote:

"The first prerequisite to an order by the Commission is that it shall be preceded by hearing and findings. In this case, while the proceedings were not ended by the interim order, the companies had full opportunity to offer all their evidence. Both direct and in rebuttal, and full opportunity to cross-examine every witness offered."

For that reason, Mr. Examiner, since we have been precluded from offering cost allocation evidence, as it would relate to this one isolated issue of rate of return, we object to the receipt of Exhibit 15.

Also, at this time, Mr. Examiner, without waiving our right to object more particularly in the future, the Columbia Gas System companies object to the receipt in evidence of Exhibit 6, which is the cost of gas supply, adjusted, sponsored by Mr. Witmer, on the grounds it is incompetent.

1620

Mr. Rhyne: Mr. Examiner, we also object to the admission of Exhibit 15, the Tennessee allocation exhibit, on the ground that we will oppose any refund which is made on the allocation basis proposed by Tennessee.

Presiding Examiner: Mr. Werner?

(1620)

Mr. Werner: As I think I indicated yesterday, Mr. Examiner, I don't remember whether we were on the record or off the record, Tennessee is definitely opposed to an interim order procedure in this case because of the pendency of the allocation problem before the Commission—before the Examiner and the Commission.

As I also indicated yesterday, I think this problem is an extremely serious one. There is now pending before the Commission a motion filed on behalf of the Columbia companies which, in effect, is asking the Commission to proceed to determine the allocation problem first. I think that motion is well taken.

Mr. Examiner, I think the issue, the question here of an interim decision with the allocation problem pending, is so important that I urge the Examiner to permit the parties and the staff, if it wishes to support its motion in more detail, to file oppositions to the motion in written form. I think it is sufficiently important so that we shouldn't have to make our oppositions, or detail the oppositions orally and burden the transcript.

1621

I would suggest, Mr. Examiner, that we do it one of two ways. If the staff desires some time to prepare a written motion or to file a memorandum in support of the motion which staff counsel made today, the Examiner could set up such time as the staff desires, and then permit the parties an agreed-upon number of days, or the days that the Examiner determines to be adequate to file responses thereto.

I would not urge that course of procedure ordinarily, except that this is a very important issue. The Examiner will recall that from the beginning we had serious doubts as to the propriety and legality of an interim order because of the allocation matter pending. I can say to the Examiner right now that were it not for the allocation matter

pending, and the fear that we have, and some of our customers have with respect to that fact, we would not oppose an interim order procedure now in the spirit of cooperation, in trying to get some of these things done. But we must oppose it, and vigorously oppose it, because we feel that an interim order on the rate of return issue in view of the pendency of the allocation could very well be an illegal order, and, indeed, we think it is.

So I would urge the Examiner to permit us time within which to respond to the motion of the staff counsel, and then to do, as I believe the Examiner indicated yesterday, if you so desire, set a time, a lag time, so to speak, from the time

the Commission passes upon this motion for briefs, in the event the Commission decision is one granting the staff's motion.

Presiding Examiner: All right. I want to first act on the exhibits before we have any more discussion.

I am simply going to comment with respect to the objections raised by Mr. Reeder and Mr. Smith, that the general position of some of the intervenors with respect to the treatment of the allocation issue in this proceeding has already been discussed on the record from time to time since the hearing commenced in February, and I have made my position clear.

So I am not going to state any further reasons as to why I am going to now deny the objections, and I am going to receive in evidence now Exhibits 1 through 15, including Exhibits 1-A, 4-A, and 8-A; also Exhibits 16; 17 has already been received in evidence, and all the other exhibits following Exhibit 17, according to my notes, have also already been received in evidence.

Nos. 591 & 605

Office-Supreme Court U.S.
FILED
DEC 8 1961
JOHN F. DAVIS, CLERK

IN THE

United States Court of Appeals

FOR THE FIFTH CIRCUIT

No. 18,547

TENNESSEE GAS TRANSMISSION COMPANY

v.

FEDERAL POWER COMMISSION

No. 18,597

THE MANUFACTURERS LIGHT AND HEAT COMPANY, ET AL.

v.

FEDERAL POWER COMMISSION

On Petition to Review Orders of the Federal Power Commission

JOINT APPENDIX

Volume II

EXHIBITS AND PLEADINGS

(Record Pages 1818-5595)
(Joint Appendix Pages 383-626)

INDEX

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS	109-1622	I	1-381
Witnesses:			
L. E. Katzenback	150-456	I	29-54
	783-957	I	110-147
	1445-1483	I	315-335
	1484-1614	I	335-376
Ross M. Robertson	1319-1347	I	308-315
Prepared Testimony	1302-1318	I	296-308
Felix I. Shaffner	978-980	I	147-148
	1018-1199	I	178-288
Prepared Testimony	981-1017	I	148-178
Gardiner Symonds	109-144	I	2-28
	597-774	I	54-110
Louis Zanoff	1202-1241	I	289-295
HEARING EXHIBITS	1818-2358	II	383-496
No. 4-A: Schedule A—Rate Base and Return (Revised)	1818	II	383
No. 11:			
Schedule A—Moody's Average of Yields on Public Utility Bonds:			
Rating Aaa	2210	II	385
Rating Aa	2211	II	386
Rating A	2212	II	387
Rating Baa	2213	II	388
Schedule B—Tabulation of Moody's Average Rate on "A" Rated Public Utility Bonds for the Month of Issue and Yields to Maturity of First Mortgage Pipe Line Bonds	2214	II	389

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
Schedule C—Cost of Long-Term Debt Capital at Dates of Rate Cases	2215	II	390
Schedule D—Cost of Preferred Stock Capital at Dates of Rate Cases	2216	II	391
Schedule E—Month-End Bank Balances 12-Months Ended July 31, 1959	2217	II	392
No. 13: Rate of Return Study—Gardiner Symonds	2222-2244	II	393-412
No. 14: Rate of Return Study	2246-2250	II	413-417
No. 18: Speech by Gardiner Symonds of Tennessee Gas Transmission Company, delivered on February 10, 1960	2259-2274	II	419-436
No. 19: Page 867, Value Line Investment Survey—March 21, 1960	2275	II	437
No. 20: Selected Common Stock Price-Index, 1943-1959	2276-2277	II	439-440
No. 21: Cost of Capital and Rate of Return Study, March, 1960	2280-2318	II	441-474
No. 22: Tabulation "Return Earned on Average Book Value of the Common Shares, 10 Natural Gas Pipe Line Companies"	2319	II	475
No. 23: Company Earnings Price Ratios, 1950-1959, Tennessee Gas Transmission Company	2320	II	476
No. 25: Comparison of Minimum Bill Revenues With Total Revenues from Jurisdictional Pipeline Sales and Transportation of Natural Gas Under Tariff Rate Schedules	2323-2327	II	477-481
No. 27: Yields of Preferred Stock Issues by Tennessee Gas Transmission Company	2332	II	482

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
No. 30: Tennessee Gas Transmission Company Common Stock Prices, Per Cent Increase from Year Shown to December, 1959	2345	II	483
No. 31: Tennessee Gas Transmission Company Capitalization, Consolidated February 29, 1960	2346-2347	II	484-485
No. 32: Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of February 29, 1960	2348-2350	II	486-488
No. 33: Tennessee Gas Transmission Company Capitalization—Non-Consolidated February 29, 1960	2351-2352	II	489-490
No. 34: Tennessee Gas Transmission Company Capitalization—Non-Consolidated March 31, 1960	2353-2354	II	491-492
No. 35: Tennessee Gas Transmission Company and Consolidated Subsidiaries, Cost of Debt Capital as of March 31, 1960	2355-2357	II	493-495
No. 36: Common Stock Prices Per Cent Increase from Year Shown to December, 1959	2358	II	496
PLEADINGS	4383-5595	II	497-626
Tennessee Data Supporting Revised Tariff, filed October 5, 1959	4383-4410	II	497-501
Order Suspending Proposed Tariff and Other Revised Tariff Sheets and Providing for Hearing, issued November 4, 1959	4736-4738	II	502-505
Order Making Effective Proposed Tariff Changes Upon Filing of Undertaking to Assure Refund of Excess Charges, issued April 29, 1960	5189-5192	II	505-509
Tennessee's Agreement and Undertaking, received May 6, 1960	5202-5204	II	510-512

	Certified Record Pages	Joint Appendix Volume	Joint Appendix Pages
Order Adopting Interim Order Procedure Omitting Intermediate Decision and Fixing Rate for Oral Argument, issued June 17, 1960	5278-5280	II	513-516
Order Denying Motions, issued July 1, 1960	5297-5298	II	516-518
Motion To Omit Intermediate Decision Procedure on Issue of Cost Allocation, received July 19, 1960	5316-5318	II	519-521
Order Den[illegible] Motions, issued August 5, 1960	5370-5371	II	522-523
Order Determining Rate of Return Disallowing Proposed Increased Rates and Directing Payment of Refunds and Permitting Substitution of Lower Interim Rates, issued August 9, 1960	5372-5382	II	524-540
Application of Tennessee Gas Transmission Company for Rehearing of Order Issued August 9, 1960	5420-5457	II	541-576a
Joint Application and Petition for Rehearing on Behalf of the Manufacturers Light and Heat Company, the Ohio Fuel Gas Company, and United Fuel Gas Company So That the Commission Will Reconsider and Modify Its Order Issued August 9, 1960, Insofar As It Pertains to Interim Refunds	5470-5477	II	577-584
Order Denying Applications for Rehearing, issued September 27, 1960	5491-5494	II	585-591
Memorandum of Tennessee Gas Transmission Company in Opposition to Staff Motion for Interim Order, received June 13, 1960	5551-5566	II	591-606
Memorandum, Answer and Objections of the Manufacturers Light and Heat Company, the Ohio Fuel Gas Company and United Fuel Gas Company to the Motion of Staff Counsel for Interim Refund Order	5577-5595	II	609-626

	Original	Print
Proceedings in the United State Court of Appeals for the Fifth Circuit	626a	627
Transcript of hearing of October 19, 1960	626a	627
Appearances	626b	627
Colloquy between Court and counsel for respondent	626c	628
Per Curiam order of the court denying stay pending review	630	632
Judge Wisdom dissenting	631	633
Order denying rehearing on motions for stay	668	634
Minute entry of argument and submission	670	634
Chief Judge Tuttle Opinion, approving rate of return	671	635
Per curiam, setting aside in part the order of the Commission	684	644
Chief Judge Tuttle, dissenting in part	684	644
Judgment	689	647
Order denying petition for rehearing	690	648
Order staying mandate	691	648
Order further staying mandate	694	649
Answer and objections of New England Zone Companies to Tennessee Gas Transmission Company's motion to omit intermediate decision procedure on issue of cost allocation filed before the Federal Power Commission	696	650
Cross-motion to expedite and answer motion to omit intermediate decision procedure on issue of cost allocation filed before the Federal Power Commission	713	655
Clerk's certificate (omitted in printing)	785	660
Orders allowing certiorari	786	660

IN THE

United States Court of Appeals

FOR THE FIFTH CIRCUIT

No. 18,547

TENNESSEE GAS TRANSMISSION COMPANY

v.

FEDERAL POWER COMMISSION

No. 18,597

THE MANUFACTURERS LIGHT AND HEAT COMPANY, ET AL.

v.

FEDERAL POWER COMMISSION

On Petition to Review Orders of the Federal Power Commission

JOINT APPENDIX

Volume II

(1818)

Hearing Exhibit No. 4-A

1818

Docket No. G-19983
Exhibit 4-A
Schedule A
Witness: Walser

TENNESSEE GAS TRANSMISSION COMPANY
RATE BASE AND RETURN (REVISED)
TWELVE MONTHS ENDED JULY 31, 1959

Line No.	Column 1 Particulars	(2) Reference	(3) Amount
1	Average net gas plant	Exhibit ___ (D), Schedule B	$838,307,235
2	Net working capital	Exhibit ___ (D), Schedule C	12,323,509
3	Total rate base		$850,630,744
4	Return at 7%		$ 59,544,152
5	NOTE: This schedule supersedes Schedule A of Exhibit 4.		

FEDERAL POWER COMMISSION
Docket No. G-19983
Hearing Ex. No. 4-A
Date Identified APR 6 1960
Date Admitted MAY 2 5 1960

TENNESSEE GAS TRANSMISSION COMPANY
MOODY'S AVERAGE OF YIELDS ON PUBLIC UTILITY BONDS
RATING Aaa

Line No	Column 1 Year	(2) January	(3) February	(4) March	(5) April	(6) May	(7) June	(8) July	(9) August	(10) September	(11) October	(12) November	(13) December	(14) Average
1	1920	6.13%	6.22%	6.22%	6.35%	6.53%	6.79%	6.77%	6.82%	6.72%	6.90%	6.53%	6.78%	6.53%
2	1921	6.68	6.58	6.54	6.49	6.56	6.59	6.56	6.35	6.24	5.99	5.81	5.72	6.34
3	1922	5.59	5.49	5.37	5.30	5.23	5.14	5.15	5.09	5.03	5.01	5.19	5.11	5.23
4	1923	5.09	5.08	5.22	5.31	5.22	5.17	5.13	5.06	5.13	5.11	5.11	5.10	5.14
5	1924	5.09	5.04	5.03	5.05	5.00	4.95	4.91	4.88	4.89	4.85	4.90	4.89	4.96
6	1925	4.89	4.91	4.86	4.84	4.80	4.74	4.81	4.83	4.79	4.77	4.76	4.80	4.82
7	1926	4.78	4.70	4.73	4.66	4.64	4.67	4.68	4.69	4.72	4.74	4.70	4.69	4.70
8	1927	4.65	4.66	4.63	4.59	4.61	4.58	4.62	4.57	4.55	4.54	4.53	4.49	4.59
9	1928	4.47	4.47	4.43	4.42	4.45	4.53	4.56	4.59	4.54	4.55	4.53	4.56	4.51
10	1929	4.55	4.58	4.63	4.63	4.66	4.73	4.70	4.74	4.74	4.73	4.71	4.62	4.67
11	1930	4.62	4.66	4.60	4.58	4.58	4.54	4.49	4.43	4.37	4.36	4.38	4.43	4.50
12	1931	4.33	4.34	4.30	4.27	4.21	4.21	4.22	4.19	4.27	4.62	4.59	4.81	4.36
13	1932	4.92	5.00	4.68	4.70	4.71	4.83	4.76	4.57	4.39	4.32	4.30	4.18	4.61
14	1933	4.10	4.17	4.38	4.48	4.41	4.29	4.20	4.14	4.20	4.21	4.46	4.45	4.29
15	1934	4.25	4.10	4.03	3.97	3.93	3.85	3.81	3.83	3.87	3.82	3.78	3.74	3.92
16	1935	3.69	3.61	3.55	3.55	3.56	3.53	3.47	3.51	3.51	3.48	3.41	3.36	3.52
17	1936	3.30	3.26	3.28	3.26	3.23	3.21	3.19	3.20	3.18	3.16	3.13	3.07	3.21
18	1937	3.07	3.16	3.29	3.33	3.28	3.25	3.22	3.20	3.21	3.21	3.15	3.11	3.21
19	1938	3.10	3.09	3.08	3.10	3.03	3.02	3.01	3.01	3.02	2.98	2.94	2.92	3.03
20	1939	2.87	2.87	2.86	2.87	2.83	2.83	2.80	2.83	3.14	3.02	2.87	2.82	2.88
21	1940	2.81	2.80	2.76	2.75	2.82	2.85	2.78	2.79	2.74	2.74	2.72	2.72	2.77
22	1941	2.77	2 76	2.74	2.73	2.72	2.69	2.65	2.64	2.65	2.63	2.62	2.71	2.69
23	1942	2.74	2.77	2.79	2.75	2.75	2.74	2.72	2.72	2.71	2.71	2.69	2.71	2.73
24	1943	2.70	2.67	2.67	2.66	2.66	2.63	2.61	2.62	2.64	2.63	2.64	2.68	2.65
25	1944	2.67	2.66	2.65	2.64	2.64	2.63	2.62	2.63	2.65	2.66	2.68	2.66	2.65
26	1945	2.65	2.64	2.62	2.61	2.63	2.60	2.61	2.63	2.61	2.60	2.60	2.60	2.62
27	1946	2.51	2.44	2.44	2.45	2.49	2.48	2.48	2.50	2.55	2.58	2.58	2.60	2.51
28	1947	2.54	2.54	2.55	2.52	2.52	2.52	2.53	2.53	2.58	2.67	2.74	2.82	2.59
29	1948	2.82	2.82	2.81	2.75	2.74	2.75	2.82	2.87	2.85	2.85	2.85	2.81	2.81
30	1949	2.73	2.72	2.71	2.72	2.72	2.71	2.67	2.62	2.61	2.61	2.58	2.58	2.67
31	1950	2.56	2.56	2.57	2.59	2.61	2.62	2.64	2.61	2.65	2.66	2.66	2.67	2.62
32	1951	2.65	2.67	2.80	2.89	2.91	2.99	2.97	2.90	2.87	2.92	3.00	3.03	2.88
33	1952	3.01	2.96	2.99	2.96	2.96	2.97	3.00	3.00	3.00	3.04	3.00	2.99	2.99
34	1953	3.05	3.13	3.18	3.30	3.40	3.41	3.32	3.30	3.35	3.20	3.12	3.15	3.24
35	1954	3.07	2.96	2.87	2.87	2.90	2.92	2.92	2.90	2.94	2.92	2.92	2.93	2.93
36	1955	2.95	3.01	3.05	3.03	3.07	3.08	3.09	3.15	3.19	3.14	3.13	3.17	3.09
37	1956	3.14	3.10	3.11	3.23	3.30	3.29	3.30	3.44	3.58	3.63	3.72	3.79	3.39
38	1957	3.81	3.74	3.71	3.71	3.77	3.89	4.05	4.21	4.26	4.25	4.22	3.93	3.96
39	1958	3.68	3.62	3.67	3.66	3.63	3.64	3.74	3.94	4.17	4.25	4.22	4.19	3.87
40	1959	4.23	4.25	4.24	4.31	4.48	4.56	4.60	4.54	4.62	4.74	4.66	4.65	4.40

Docket No. G-19983
Exhibit 11
Schedule A
Witness: McGee
Page 2 of 4

(2211)

TENNESSEE GAS TRANSMISSION COMPANY
MOODY'S AVERAGE OF YIELDS ON PUBLIC UTILITY BONDS
RATING Aa

Line No.	Column 1 Year	(2) January	(3) February	(4) March	(5) April	(6) May	(7) June	(8) July	(9) August	(10) September	(11) October	(12) November	(13) December	(14) Average
1	1920	6.22%	6.32%	6.45%	6.54%	6.90%	6.88%	6.68%	6.92%	6.77%	6.59%	6.69%	6.86%	6.65%
2	1921	6.79	6.67	6.73	6.73	6.74	6.79	6.77	6.67	6.46	6.38	6.05	5.76	6.55
3	1922	5.76	5.70	5.65	5.53	5.45	5.51	5.46	5.30	5.22	5.34	5.46	5.41	5.48
4	1923	5.36	5.40	5.57	5.58	5.52	5.52	5.60	5.48	5.52	5.53	5.49	5.49	5.51
5	1924	5.43	5.40	5.42	5.42	5.35	5.28	5.24	5.23	5.25	5.21	5.20	5.17	5.30
6	1925	5.15	5.14	5.13	5.06	4.98	4.97	5.00	5.01	4.98	4.97	4.97	4.96	5.03
7	1926	4.91	4.91	4.91	4.88	4.86	4.85	4.89	4.88	4.90	4.89	4.86	4.83	4.88
8	1927	4.83	4.86	4.83	4.81	4.80	4.79	4.77	4.72	4.73	4.69	4.69	4.65	4.76
9	1928	4.61	4.59	4.57	4.57	4.60	4.70	4.71	4.78	4.77	4.75	4.72	4.75	4.68
10	1929	4.75	4.81	4.89	4.88	4.90	4.90	4.91	4.97	5.02	5.05	4.96	4.87	4.91
11	1930	4.89	4.93	4.83	4.79	4.77	4.76	4.73	4.87	4.62	4.63	4.68	4.74	4.75
12	1931	4.64	4.64	4.57	4.54	4.47	4.48	4.48	4.46	4.58	4.99	4.97	5.36	4.68
13	1932	5.54	5.69	5.36	5.52	5.63	5.72	5.70	5.27	4.99	4.86	4.84	4.75	5.32
14	1933	4.61	4.76	5.06	5.25	5.15	4.93	4.75	4.73	4.97	5.04	5.47	5.47	5.02
15	1934	5.29	4.88	4.73	4.66	4.60	4.52	4.46	4.55	4.65	4.59	4.49	4.48	4.66
16	1935	4.40	4.26	4.19	4.11	4.05	4.00	3.93	3.93	3.90	3.85	3.81	3.76	4.02
17	1936	3.70	3.68	3.67	3.69	3.65	3.60	3.57	3.55	3.54	3.48	3.35	3.31	3.57
18	1937	3.33	3.43	3.53	3.56	3.48	3.47	3.44	3.41	3.43	3.48	3.42	3.37	3.45
19	1938	3.35	3.35	3.34	3.42	3.31	3.28	3.26	3.26	3.31	3.23	3.14	3.10	3.28
20	1939	3.05	3.01	2.99	3.01	2.96	2.97	2.93	2.97	3.31	3.20	2.99	2.97	3.03
21	1940	2.94	2.94	2.92	2.88	2.99	2.99	2.92	2.92	2.88	2.89	2.86	2.85	2.92
22	1941	2.88	2.88	2.87	2.90	2.87	2.84	2.80	2.81	2.81	2.76	2.74	2.85	2.83
23	1942	2.87	2.91	2.92	2.89	2.89	2.89	2.86	2.86	2.85	2.83	2.81	2.83	2.87
24	1943	2.79	2.76	2.75	2.75	2.74	2.71	2.68	2.69	2.70	2.70	2.73	2.77	2.73
25	1944	2.74	2.74	2.72	2.71	2.70	2.70	2.70	2.69	2.69	2.72	2.75	2.72	2.72
26	1945	2.72	2.69	2.67	2.69	2.69	2.65	2.63	2.65	2.66	2.67	2.64	2.65	2.67
27	1946	2.57	2.51	2.49	2.51	2.56	2.56	2.55	2.57	2.62	2.65	2.66	2.66	2.58
28	1947	2.60	2.60	2.61	2.59	2.60	2.60	2.60	2.60	2.66	2.79	2.85	2.95	2.67
29	1948	2.94	2.92	2.90	2.87	2.86	2.85	2.91	2.96	2.95	2.95	2.96	2.91	2.92
30	1949	2.82	2.83	2.82	2.83	2.82	2.80	2.75	2.71	2.69	2.69	2.66	2.65	2.76
31	1950	2.64	2.64	2.64	2.65	2.69	2.69	2.71	2.66	2.71	2.72	2.72	2.72	2.68
32	1951	2.71	2.73	2.87	2.98	2.97	3.06	3.04	2.96	2.92	2.98	3.09	3.11	2.95
33	1952	3.06	3.01	3.05	3.02	3.02	3.04	3.05	3.06	3.06	3.08	3.05	3.05	3.05
34	1953	3.11	3.18	3.22	3.35	3.50	3.57	3.41	3.38	3.42	3.27	3.20	3.21	3.32
35	1954	3.14	3.03	2.93	2.94	2.97	3.00	2.99	2.98	3.00	2.99	2.99	2.99	3.00
36	1955	3.01	3.06	3.09	3.08	3.11	3.12	3.13	3.17	3.21	3.18	3.17	3.23	3.13
37	1956	3.17	3.13	3.16	3.30	3.34	3.34	3.37	3.48	3.61	3.69	3.76	3.84	3.43
38	1957	3.87	3.81	3.80	3.80	3.85	3.94	4.10	4.25	4.31	4.32	4.30	4.05	4.03
39	1958	3.73	3.68	3.73	3.72	3.69	3.70	3.79	3.98	4.24	4.29	4.25	4.22	3.92
40	1959	4.27	4.31	4.30	4.40	4.57	4.67	4.64	4.66	4.72	4.79	4.68	4.71	4.56

386

Docket No. G-19983
Exhibit 11
Schedule A
Witness: McGee
Page 3 of 4

TENNESSEE GAS TRANSMISSION COMPANY
MOODY'S AVERAGE OF YIELDS ON PUBLIC UTILITY BONDS
RATING A

Line No.	Column 1 Year	(2) January	(3) February	(4) March	(5) April	(6) May	(7) June	(8) July	(9) August	(10) September	(11) October	(12) November	(13) December	(14) Average
1	1930	6.87%	7.03%	7.04%	7.36%	7.72%	7.73%	7.82%	7.96%	7.83%	7.77%	7.73%	7.96%	7.57%
2	1931	7.74	7.65	7.61	7.61	7.66	7.64	7.72	7.87	7.32	7.04	6.55	6.32	7.38
3	1932	6.41	6.32	6.22	6.06	5.93	5.91	5.89	5.86	5.69	5.83	5.87	5.95	6.00
4	1933	5.85	5.83	6.06	6.04	6.00	6.06	6.02	5.77	5.95	5.98	6.00	6.05	5.97
5	1934	6.02	6.00	5.97	5.94	5.91	5.79	5.68	5.70	5.71	5.65	5.62	5.63	5.80
6	1935	5.61	5.52	5.53	5.52	5.25	5.25	5.37	5.42	5.40	5.39	5.43	5.36	5.42
7	1936	5.29	5.21	5.23	5.20	5.15	5.13	5.13	5.15	5.17	5.18	5.15	5.12	5.17
8	1937	5.10	5.13	5.13	5.04	5.04	5.05	5.05	5.02	4.98	4.95	4.92	4.88	5.02
9	1938	4.85	4.85	4.82	4.82	4.87	4.99	5.04	5.08	5.05	4.99	4.98	5.05	4.95
10	1939	5.05	5.10	5.14	5.14	5.14	5.23	5.24	5.30	5.38	5.34	5.29	5.23	5.22
11	1930	5.26	5.29	5.18	5.15	5.04	5.01	4.99	4.95	4.86	4.88	4.96	5.11	5.06
12	1931	5.01	5.01	4.89	4.86	4.84	4.87	4.83	4.81	5.05	5.54	5.51	6.24	5.12
13	1932	6.17	6.41	6.06	6.83	7.36	7.57	7.28	6.35	5.91	5.81	5.88	5.85	6.46
14	1933	5.39	5.77	6.34	6.89	6.50	6.11	5.91	5.98	6.36	6.36	7.06	7.22	6.32
15	1934	6.56	5.76	5.66	5.44	5.39	5.40	5.29	5.43	5.56	5.40	5.38	5.36	5.55
16	1935	5.18	4.96	4.88	4.79	4.61	4.53	4.42	4.44	4.43	4.40	4.35	4.29	4.61
17	1936	4.21	4.17	4.17	4.17	4.14	4.12	4.07	4.06	4.05	4.04	3.95	3.83	4.08
18	1937	3.82	3.89	4.00	4.07	4.00	3.99	3.94	3.89	3.96	4.09	4.08	4.03	3.98
19	1938	4.01	4.03	3.99	4.08	3.95	3.95	3.86	3.84	3.88	3.79	3.73	3.74	3.90
20	1939	3.68	3.59	3.54	3.55	3.50	3.47	3.43	3.41	3.71	3.58	3.41	3.38	3.52
21	1940	3.34	3.35	3.34	3.25	3.30	3.34	3.23	3.21	3.18	3.15	3.11	3.10	3.24
22	1941	3.15	3.20	3.16	3.14	3.08	3.03	3.00	2.98	3.00	3.00	2.98	3.06	3.07
23	1942	3.09	3.09	3.12	3.09	3.10	3.12	3.10	3.10	3.08	3.08	3.08	3.06	3.09
24	1943	3.05	3.02	3.01	3.00	3.00	2.98	2.96	2.96	2.96	2.97	2.98	2.99	2.99
25	1944	2.99	2.99	2.97	2.99	2.99	2.99	2.96	2.94	2.93	2.94	2.96	2.97	2.97
26	1945	2.99	2.98	2.97	2.95	2.92	2.87	2.83	2.80	2.79	2.79	2.77	2.75	2.87
27	1946	2.69	2.67	2.66	2.65	2.69	2.70	2.69	2.71	2.75	2.76	2.76	2.76	2.71
28	1947	2.72	2.72	2.72	2.70	2.70	2.71	2.73	2.73	2.80	2.88	2.93	3.05	2.78
29	1948	3.05	3.05	3.02	2.97	2.94	2.94	2.99	3.03	3.05	3.03	3.07	3.06	3.02
30	1949	2.99	2.99	2.97	2.96	2.95	2.94	2.90	2.86	2.85	2.83	2.81	2.78	2.90
31	1950	2.76	2.76	2.76	2.77	2.79	2.79	2.79	2.76	2.80	2.83	2.86	2.86	2.79
32	1951	2.83	2.84	2.95	3.09	3.13	3.21	3.26	3.19	3.14	3.17	3.24	3.29	3.11
33	1952	3.29	3.23	3.25	3.23	3.22	3.22	3.22	3.24	3.24	3.26	3.24	3.22	3.24
34	1953	3.25	3.30	3.36	3.47	3.63	3.71	3.66	3.61	3.62	3.49	3.40	3.38	3.49
35	1954	3.32	3.23	3.16	3.16	3.14	3.16	3.14	3.13	3.12	3.12	3.11	3.11	3.16
36	1955	3.13	3.14	3.15	3.15	3.19	3.21	3.21	3.24	3.27	3.30	3.32	3.35	3.22
37	1956	3.31	3.29	3.29	3.40	3.48	3.49	3.55	3.63	3.72	3.79	3.82	3.91	3.56
38	1957	3.96	4.05	4.05	4.01	4.01	4.09	4.20	4.37	4.55	4.61	4.62	4.36	4.24
39	1958	3.93	3.96	4.13	3.95	4.01	3.99	4.04	4.29	4.55	4.56	4.47	4.49	4.20
40	1959	4.52	4.50	4.47	4.56	4.77	4.86	4.88	4.89	5.03	4.96	4.90	4.96	4.78

(2213)

TENNESSEE GAS TRANSMISSION COMPANY
MOODY'S AVERAGE OF YIELDS ON PUBLIC UTILITY BONDS
RATING Baa

Line No.	Column 1 Year	(2) January	(3) February	(4) March	(5) April	(6) May	(7) June	(8) July	(9) August	(10) September	(11) October	(12) November	(13) December	(14) Average
1	1920	7.30%	7.48%	7.59%	7.88%	8.03%	7.99%	8.21%	8.21%	8.29%	8.27%	8.28%	8.36%	7.99%
2	1921	8.51	8.50	8.51	8.52	8.54	8.62	8.64	8.66	8.30	8.40	7.92	7.68	8.40
3	1922	7.83	7.74	7.55	7.29	6.86	6.92	6.83	6.88	6.77	6.51	6.56	6.56	7.03
4	1923	6.59	6.60	6.73	6.78	6.78	6.80	6.79	6.77	6.81	6.79	6.78	6.80	6.75
5	1924	6.73	6.64	6.60	6.55	6.42	6.32	6.23	6.24	6.24	6.21	6.24	6.13	6.38
6	1925	6.12	6.08	6.02	5.99	5.85	5.82	5.83	5.87	5.85	5.83	5.81	5.88	5.91
7	1926	5.81	5.76	5.80	5.75	5.67	5.61	5.61	5.62	5.62	5.61	5.58	5.54	5.67
8	1927	5.51	5.54	5.54	5.49	5.50	5.51	5.48	5.43	5.41	5.39	5.38	5.32	5.46
9	1928	5.24	5.20	5.18	5.18	5.23	5.38	5.38	5.43	5.45	5.43	5.38	5.42	5.33
10	1929	5.48	5.52	5.62	5.69	5.66	5.72	5.79	5.89	5.92	5.91	6.00	5.96	5.76
11	1930	5.92	5.93	5.80	5.77	5.76	5.78	5.78	5.70	5.63	5.82	6.15	6.56	5.88
12	1931	6.36	6.37	6.18	6.19	6.36	6.60	6.47	6.60	7.04	8.01	7.80	8.81	6.90
13	1932	8.18	8.33	8.31	9.56	10.21	10.70	10.11	7.92	7.48	7.87	8.32	8.41	8.78
14	1933	8.14	8.89	9.87	10.64	9.30	8.63	8.26	8.75	9.71	9.90	10.30	10.12	9.38
15	1934	8.86	7.58	7.58	7.18	7.17	7.20	7.36	7.68	7.62	7.38	7.21	7.03	7.49
16	1935	6.60	6.20	5.99	5.94	5.51	5.41	5.22	5.22	5.25	5.24	5.12	5.07	5.56
17	1936	4.88	4.80	4.78	4.77	4.76	4.72	4.62	4.59	4.54	4.53	4.53	4.53	4.67
18	1937	4.50	4.55	4.76	4.98	5.02	5.17	5.08	5.04	5.25	5.53	5.59	5.60	5.09
19	1938	5.59	5.79	5.80	5.82	5.32	5.33	5.01	4.93	5.05	4.90	4.77	4.77	5.26
20	1939	4.66	4.59	4.53	4.62	4.50	4.41	4.39	4.39	4.64	4.48	4.38	4.36	4.50
21	1940	4.30	4.23	4.14	4.06	4.10	4.15	3.99	3.98	3.94	3.92	3.88	3.86	4.05
22	1941	3.87	3.90	3.90	3.86	3.85	3.83	3.82	3.80	3.80	3.82	3.82	3.85	3.84
23	1942	3.83	3.81	3.84	3.79	3.76	3.73	3.68	3.67	3.66	3.66	3.67	3.63	3.73
24	1943	3.65	3.61	3.58	3.60	3.60	3.60	3.55	3.55	3.55	3.53	3.55	3.55	3.58
25	1944	3.54	3.53	3.52	3.53	3.53	3.53	3.51	3.51	3.51	3.53	3.54	3.50	3.52
26	1945	3.50	3.48	3.48	3.49	3.47	3.43	3.40	3.37	3.34	3.29	3.22	3.15	3.39
27	1946	3.07	3.00	2.96	2.98	3.02	3.04	3.03	3.02	3.06	3.06	3.07	3.07	3.03
28	1947	3.05	3.03	3.04	3.04	3.03	3.04	3.03	3.02	3.06	3.13	3.18	3.25	3.08
29	1948	3.30	3.31	3.29	3.28	3.27	3.29	3.34	3.40	3.42	3.44	3.48	3.47	3.36
30	1949	3.42	3.40	3.36	3.31	3.30	3.28	3.25	3.25	3.22	3.19	3.17	3.16	3.28
31	1950	3.18	3.17	3.16	3.15	3.15	3.15	3.18	3.18	3.19	3.20	3.21	3.21	3.18
32	1951	3.21	3.21	3.23	3.31	3.38	3.45	3.49	3.48	3.44	3.49	3.49	3.53	3.39
33	1952	3.57	3.55	3.55	3.54	3.54	3.55	3.53	3.50	3.50	3.50	3.47	3.50	3.53
34	1953	3.51	3.53	3.56	3.62	3.75	3.80	3.83	3.88	3.93	3.86	3.78	3.72	3.73
35	1954	3.72	3.69	3.58	3.53	3.51	3.50	3.48	3.47	3.44	3.41	3.39	3.38	3.51
36	1955	3.37	3.38	3.38	3.40	3.40	3.41	3.43	3.46	3.48	3.47	3.48	3.50	3.43
37	1956	3.50	3.50	3.51	3.59	3.62	3.65	3.70	3.84	4.02	4.15	4.15	4.18	3.78
38	1957	4.26	4.26	4.25	4.24	4.28	4.33	4.41	4.49	4.66	4.73	4.82	4.81	4.46
39	1958	4.60	4.21	4.25	4.25	4.23	4.20	4.19	4.44	4.69	4.74	4.67	4.65	4.43

288

2214

Docket No. G-19983
Exhibit 11
Schedule B
Witness: McGee

TENNESSEE GAS TRANSMISSION COMPANY
TABULATION OF MOODY'S AVERAGE RATE ON "A" RATED PUBLIC UTILITY BONDS
FOR THE MONTH OF ISSUE AND YIELDS TO MATURITY OF FIRST MORTGAGE PIPE LINE BONDS

Series	Date of Issuance	Offering Price Per Unit	Yield to Maturity	Moody's "A" Rated Public Utility Bond Average
2-3/4% Series due 1966	April, 1946	101.500	2.65%	2.65%
3 % Series due 1967	September, 1947	102.250	2.85	2.80
3 % Series due 1969	June, 1949	100.750	2.95	2.94
3 % Series due 1970	September, 1950	101.750	2.88	2.80
3-1/8% Series due 1971	March, 1951	101.250	3.04	2.95
3-1/2% Series due 1971	September, 1951	100.718	3.45	3.14
3-7/8% Series due 1972	September, 1952	101.747	3.75	3.24
4-1/8% Series due 1973	February, 1953	101.295	4.03	3.30
4 % Series due 1973	December, 1953	101.379	3.90	3.38
3-5/8% Series due 1974	June, 1954	101.787	3.50	3.16
3-3/4% Series due 1974	September, 1954	100.000	3.75	3.12
3-1/2% Series due 1975	December, 1954	101.440	3.40	3.11
3-7/8% Series due 1976	September, 1955	101.060	3.80	3.27
4-3/4% Series due 1976	September, 1956	100.650	4.70	3.72
5-1/4% Series due 1977	June, 1957	100.000	5.25	4.09
5-3/8% Series due 1979	September, 1958	100.000	5.38	4.55
5-1/4% Series due 1979	July, 1959	101.250	5.15	4.88

TENNESSEE GAS TRANSMISSION COMPANY
COST OF LONG-TERM DEBT CAPITAL
AT DATES OF RATE CASES

Line No.	Column 1	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Particulars	Date of Issuance	Cost to Company	Principal Amount of Issue	September 30,1946(G-606) Amount Outstanding	Total Cost	April 30, 1951 (G-1741) Amount Outstanding	Total Cost	June 30, 1952 (G-2052) Amount Outstanding	Total Cost	June 30, 1953 (G-2252) Amount Outstanding	Total Cost
1	FIRST MORTGAGE PIPE LINE											
2	BONDS:											
3	2-3/4% Series, 1966	April 12, 1946	2.75%	$ 35,000,000	$35,000,000	$ 962,500	$ 31,623,000	$ 869,633	$ 30,747,000	$ 845,543	$ 29,820,000	$ 820,050
4	3% Series, 1967	September 16, 1947	2.93	40,000,000	-	-	36,200,000	1,060,660	34,700,000	1,016,710	33,200,000	972,760
5	3% Series, 1969	June 27, 1949	3.01	50,000,000	-	-	48,063,000	1,446,696	46,149,000	1,389,085	44,313,000	1,333,821
6	3% Series, 1970	September 15, 1950	2.94	40,000,000	-	-	40,000,000	1,176,000	39,200,000	1,152,480	37,700,000	1,108,380
7	3-1/8% Series, 1971	March 2, 1951	3.05	35,000,000	-	-	35,000,000	1,067,500	34,650,000	1,056,825	33,650,000	1,026,325
8	3-1/2% Series, 1971	September 17, 1951	3.51	45,000,000	-	-	-	-	44,950,000	1,577,745	44,100,000	1,547,910
9	3-7/8% Series, 1972	September 15, 1952	3.83	40,000,000	-	-	-	-	-	-	40,000,000	1,532,000
10	4-1/8% Series, 1973	February 17, 1953	4.15	30,000,000	-	-	-	-	-	-	30,000,000	1,245,000
11	4% Series, 1973	December 8, 1953	4.00	25,000,000	-	-	-	-	-	-	-	-
12	3-5/8% Series, 1974	June 28, 1954	3.57	25,000,000	-	-	-	-	-	-	-	-
13	3-3/4% Series, 1974	September 3, 1954	3.82	18,000,000	-	-	-	-	-	-	-	-
14	3-1/2% Series, 1975	December 14, 1954	3.49	125,000,000	-	-	-	-	-	-	-	-
15	3-7/8% Series, 1976	September 20, 1955	3.92	50,000,000	-	-	-	-	-	-	-	-
16	4-3/4% Series, 1976	September 26, 1956	4.85	50,000,000	-	-	-	-	-	-	-	-
17	5-1/4% Series, 1977	June 5, 1957	5.43	50,000,000	-	-	-	-	-	-	-	-
18	5-3/8% Series, 1979	September 23, 1958	5.54	50,000,000	-	-	-	-	-	-	-	-
19	5-1/4% Series, 1979	July 29, 1959	5.27	50,000,000	-	-	-	-	-	-	-	-
20					$35,000,000	$ 962,500	$190,886,000	$5,620,489	$230,396,000	$7,038,388	$292,783,000	$ 9,586,246
21	Weighted average cost of mortgage bonds					2.75%		2.94%		3.05%		3.27%
22	DEBENTURES:											
23	3-7/8% Series, 1966	June 15, 1948	3.94%	$ 25,000,000	$ -	$ -	$ 22,916,000	$ 902,890	$ 21,244,000	$ 837,014	$ 19,473,000	$ 767,236
24	4-7/8% Series, 1971	December 10, 1951	4.85	25,000,000	-	-	-	-	25,000,000	1,212,500	23,100,000	1,120,350
25	5% Series, 1973	September 21, 1953	4.99	20,000,000	-	-	-	-	-	-	-	-
26	4-1/4% Series, 1974	September 21, 1954	4.23	65,000,000	-	-	-	-	-	-	-	-
27	4% Series, 1975	April 13, 1955	4.03	25,000,000	-	-	-	-	-	-	-	-
28	4-1/2% Series, 1977	July 17, 1956	4.68	30,000,000	-	-	-	-	-	-	-	-
29	6% Series, 1977	July 31, 1957	6.33	25,000,000	-	-	-	-	-	-	-	-
30	5% Series, 1978	April 23, 1958	5.20	30,000,000	-	-	-	-	-	-	-	-
31					$ -	$ -	$ 22,916,000	$ 902,890	$ 46,244,000	$2,049,514	$ 42,573,000	$ 1,887,586
32	Weighted average cost of debentures							3.94%		4.43%		4.43%
33	BANK LOANS:											
34	2%, due 1956	April 21, 1946	2.01%	$ 10,000,000								
35	2%, due 1956	December 16, 1946	2.01	5,000,000	($10,000,000	$ 201,000	$ 9,690,000	$ 194,770	$ 7,035,000	$ 141,404	$ 5,260,000	$ 105,827
36	2-1/4%, due 1960	August 29, 1950	2.25	4,425,000	-	-	4,060,000	91,350	2,965,000	66,713	2,240,000	50,287
37	4-3/8%, due 1962	July 31, 1959	4.37	8,000,000	-	-	-	-	-	-	-	-
38					$10,000,000	$ 201,000	$ 13,750,000	$ 286,120	$ 10,000,000	$ 208,117	$ 7,500,000	$ 156,114
39	Weighted average cost of bank loans					2.01%		2.08%		2.08%		2.08%
40					$45,000,000	$1,163,500	$227,552,000	$6,809,499	$286,640,000	$9,296,019	$342,850,000	$11,629,946
41	Weighted average cost of total long-term debt					2.59%		2.99%		3.24%		3.39%

Docket No.
Exhibit
Witness

(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
2, 1953 (G-2252)	March 31, 1954 (G-2434)		August 31, 1954 (G-5259)		October 31, 1954 (G-1190)		July 31, 1956 (G-7166)		July 31, 1959 (G-[illegible])		October 6, 1959
Amount			Amount		Amount		Amount		Amount		Amount
ding Total Cost	Outstanding	Total Cost	Outstanding	Total Cost	Outstanding	Total Cost	Outstanding	Total Cost	Outstanding	Total Cost	Outstanding
0,000 $ 880,050	$ 28,841,000	$ 793,126	$ 28,841,000	$ 793,127	$ 25,536,000	$ 702,299	$ 21,969,000	$ 604,148	$ 19,500,000	$ 536,250	$ 18,237,000
0,000 972,760	31,677,000	928,136	30,927,000	906,161	27,700,000	811,610	24,700,000	723,710	22,700,000	665,110	21,700,000
3,000 1,333,821	43,342,000	1,304,594	42,417,000	1,276,752	38,688,000	1,164,509	33,650,000	1,012,865	31,025,000	933,853	31,025,000
0,000 1,108,380	36,200,000	1,064,280	35,450,000	1,042,230	31,970,000	939,918	28,420,000	835,548	25,990,000	764,106	24,780,000
0,000 1,026,325	31,839,000	971,090	31,680,000	966,240	28,620,000	872,910	25,150,000	767,075	23,550,000	718,275	23,550,000
0,000 1,547,910	42,413,000	1,488,696	41,569,000	1,459,072	37,960,000	1,332,396	34,760,000	1,220,076	32,760,000	1,149,876	31,760,000
0,000 1,532,000	39,200,000	1,501,360	38,450,000	1,472,635	-	-	-	-	-	-	-
0,000 1,245,000	29,700,000	1,232,550	29,400,000	1,220,100	-	-	-	-	-	-	-
- -	25,000,000	1,000,000	25,000,000	1,000,000	-	-	-	-	-	-	-
- -	-	-	25,000,000	892,500	-	-	-	-	-	-	-
- -	-	-	-	-	24,037,000	858,121	21,920,000	782,544	20,860,000	744,702	20,860,000
- -	-	-	-	-	16,800,000	641,760	15,200,000	607,380	14,850,000	580,640	14,850,000
- -	-	-	-	-	120,460,000	4,204,054	111,590,000	3,834,491	107,130,000	3,738,837	107,130,000
- -	-	-	-	-	49,500,000	1,940,400	46,000,000	1,803,200	44,000,000	1,724,800	44,000,000
- -	-	-	-	-	50,000,000	2,425,000	49,000,000	2,376,500	46,040,000	2,232,940	44,890,000
- -	-	-	-	-	-	-	49,500,000	2,687,850	47,925,000	2,602,328	47,925,000
- -	-	-	-	-	-	-	-	-	50,000,000	2,770,000	50,000,000
- -	-	-	-	-	-	-	-	-	50,000,000	2,635,000	50,000,000
3,000 $ 9,586,246	$308,212,000	$10,283,834	$328,734,000	$11,028,817	$451,273,000	$15,892,973	$462,559,000	$17,315,387	$536,680,000	$21,796,717	$530,707,000
3.27%		3.34%		3.35%		3.52%		3.74%		4.06%	
3,000 $ 767,236	$ 19,473,000	$ 767,236	$ 18,860,000	$ 743,084	$ 15,612,000	$ 615,073	$ 13,507,000	$ 532,176	$ 12,035,000	$ 474,179	$ 12,035,000
0,000 1,120,350	22,200,000	1,076,700	21,300,000	1,033,050	-	-	-	-	-	-	-
- -	20,000,000	998,000	19,200,000	958,080	-	-	-	-	-	-	-
- -	-	-	-	-	60,150,000	2,544,345	56,975,000	2,410,043	55,050,000	2,328,615	54,100,000
- -	-	-	-	-	24,500,000	987,350	22,655,000	912,997	21,425,000	863,428	20,810,000
- -	-	-	-	-	30,000,000	1,404,000	28,733,000	1,344,704	27,394,000	1,282,273	27,394,000
- -	-	-	-	-	-	-	25,000,000	1,582,500	24,000,000	1,519,200	23,500,000
- -	-	-	-	-	-	-	30,000,000	1,560,000	29,420,000	1,529,840	28,840,000
4,000 $ 1,887,586	$ 61,673,000	$ 2,841,936	$ 59,360,000	$ 2,734,214	$130,262,000	$ 5,550,768	$176,870,000	$ 6,342,420	$169,324,000	$ 6,497,532	$168,884,000
4.43%		4.61%		4.61%		4.26%		4.72%		4.72%	
,000 $ 105,827	$ 4,380,000	$ 88,038	$ 3,490,000	$ 70,250	$ -	$ -	$ -	$ -	$ -	$ -	$ -
,000 50,287	1,870,000	42,075	1,505,000	33,861	-	-	-	-	-	-	-
- -	-	-	-	-	-	-	-	-	-	-	-
2,000 $ 156,114	$ 6,250,000	$ 130,113	$ 5,000,000	$ 104,113	$ -	$ -	$ -	$ -	$ 5,000,000	$ 227,240	$ 4,900,000
2.08%		2.08%		2.08%						4.37%	
,000 $11,629,946	$376,135,000	$13,255,883	$393,094,000	$13,867,144	$581,534,000	$21,443,741	$639,429,000	$25,657,807	$711,204,000	$28,521,492	$703,591,000
3.39%		3.52%		3.53%		3.69%		4.01%		4.01%	

TENNESSEE GAS TRANSMISSION COMPANY
COST OF PREFERRED STOCK CAPITAL
AT DATES OF RATE CASES

Line No.	Column 1 Particulars	(2) Date of Issuance	(3) Cost to Company	(4) Principal Amount of Issue	(5) Amount Outstanding	(6) Total Cost	(7) Amount Outstanding	(8) Total Cost	(9) Amount Outstanding	(10) Total Cost	(11) Amount Outstanding	(12) Total Cost
1	PREFERRED STOCK:											
2	$100-Par											
3	4.10% Series	April 12, 1946	3.96%	$10,000,000	$10,000,000	$386,000	$10,000,000	$ 386,000	$10,000,000	$ 386,000	$ 3,940,000	$ 386,000
4	4.25% Series	September 16, 194	4.26%	10,000,000	-	-	10,000,000	426,000	10,000,000	426,000	4,260,000	426,000
5	4.65% Series	October 3, 1949	4.67%	10,000,000	-	-	10,000,000	467,000	10,000,000	467,000	10,000,000	467,000
6	4.60% Series	April 10, 1950	4.51%	10,000,000	-	-	10,000,000	451,000	10,000,000	451,000	10,000,000	451,000
7	4.64% Series	October 27, 1950	4.66%	10,000,000	-	-	10,000,000	466,000	10,000,000	466,000	10,000,000	466,000
8	5.10% Series	May 15, 1951	5.25%	10,000,000	-	-	-	-	10,000,000	525,000	10,000,000	525,000
9	5.25% Series	June 4, 1952	5.50%	10,000,000	-	-	-	-	10,000,000	550,000	10,000,000	550,000
10	5.85% Series	September 21, 1953	6.15%	10,000,000	-	-	-	-	-	-	-	-
11	5.12% Series	April 5, 1954	5.37%	10,000,000	-	-	-	-	-	-	-	-
12	4.90% Series	June 21, 1955	5.18%	20,000,000	-	-	-	-	-	-	-	-
13					$10,000,000	$386,000	$50,000,000	$2,196,000	$70,000,000	$3,271,000	$84,200,000	$3,966,000
14	Weighted average cost of Preferred Stock					3.86%		4.39%		4.67%		4.71%
15	SECOND PREFERRED:											
16	4.50% Series	February 28, 1956	4.65%	$40,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	5.00% Series	September 26, 1956	5.17%	20,000,000	-	-	-	-	-	-	-	-
18	5.00% Series	Oct., 1957 - April, 1958	5.00%	12,146,900	-	-	-	-	-	-	-	-
19	5.16% Series	March 17, 1958	5.34%	20,000,000	-	-	-	-	-	-	-	-
20	4.72% Series	April 15, 1959	4.88%	44,000,000	-	-	-	-	-	-	-	-
21					$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
22	Weighted average cost of Second Preferred Stock											

Docket No. G-19983
Exhibit 11
Schedule D
Witness: McGee

(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
6-30-53 (G-2242)		3-31-54 (G-2644)		[illegible]		10-31-56 (G-11980)		7-31-58 (G-17166)		7-31-59 (G-19983)		10-31-59	
Amount Outstanding	Total Cost	Amount Outstanding	Total Cost	Amount Outstanding	Total Cost	Amount Outstanding	Total Cost	Amount Outstanding	Total Cost	Amount Outstanding	Total Cost	Amount Outstanding	Total Cost
4,930,000	$ 383,296	$ 9,648,100	$ 370,294	$ 9,648,100	$ 470,294	$ 8,600,000	$ 334,960	$ 8,060,400	$ 311,131	$ 7,721,400	$ 296,046	$ 7,657,000	$ 295,560
3,965,000	424,509	9,649,800	411,092	9,649,800	411,092	8,778,100	373,862	8,160,000	347,616	7,837,200	325,345	7,427,500	316,412
7,000,000	467,000	10,000,000	467,000	10,000,000	467,000	9,600,600	448,267	9,280,000	433,977	8,964,600	414,911	8,647,000	413,155
0,000,000	451,000	10,000,000	452,000	10,000,000	452,000	9,601,100	433,010	9,220,000	415,822	8,871,400	404,610	8,760,400	395,094
0,000,000	466,000	10,000,000	466,000	10,000,000	466,000	9,918,000	462,179	9,500,000	442,700	9,082,000	423,221	9,000,000	419,400
0,000,000	525,000	10,000,000	525,000	10,000,000	525,000	10,000,000	525,000	9,580,000	502,950	9,250,000	485,625	9,236,000	484,890
0,000,000	550,000	10,000,000	550,000	10,000,000	550,000	10,000,000	550,000	9,750,000	536,250	9,500,000	522,500	9,500,000	522,500
-	-	-	-	10,000,000	615,000	-	-	-	-	-	-	-	-
-	-	-	-	10,000,000	637,000	10,000,000	637,000	10,000,000	637,000	9,944,600	534,025	9,750,000	523,575
-	-	-	-	-	-	20,000,000	1,036,000	20,000,000	1,036,000	20,000,000	1,036,000	20,000,000	1,036,000
3,895,000	$3,266,807	$79,296,900	$3,457,305	$89,242,900	$4,480,275	$96,553,900	$4,700,068	$93,540,400	$4,561,444	$90,991,200	$4,444,283	$90,177,900	$4,406,586
	4.67%		4.86%		4.42%		4.87%		4.88%		4.88%		4.89%
-	$ -	$ -	$ -	$ -	$ -	$40,000,000	$1,960,000	$39,316,000	$1,828,194	$27,849,700	$1,295,011	$26,516,200	$1,233,004
-	-	-	-	-	-	20,000,000	1,034,000	30,265,100	1,546,547	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	19,985,000	1,067,199	-	-	-	-
-	-	-	-	-	-	-	-	-	-	44,000,000	2,147,200	44,000,000	2,147,200
-	$ -	$ -	$ -	$ -	$ -	$60,000,000	$2,894,000	$89,566,100	$4,441,940	$71,849,700	$3,442,211	$70,516,200	$3,380,204
							4.82%		4.96%		4.79%		4.79%

TENNESSEE GAS TRANSMISSION COMPANY
MONTH-END BANK BALANCES
TWELVE MONTHS ENDED JULY 31, 1959

Line No.	Column 1 Particulars	(2) National Bank of Commerce - Houston	(3) First National Bank - Dallas	(4) Bankers Trust Company - N.Y.	(5) Chase Manhattan Bank - N.Y.	(6) Chemical Corn Exchange Bank - N.Y.	(7) Guaranty Trust Company - N.Y.	(8) Irving Trust Company - N.Y.	(9) J. P. Morgan and Company Inc. - N. Y.	(10) First National City Bank - N.Y.
1	1958 - July	$ 1,432,740	$ 2,593,957	$ 1,212,290	$ 6,084,152	$ 2,727,446	$ 680,057	$ 732,813	$ 1,601,328	$ 4,075,106
2	Aug.	1,403,408	1,497,009	812,290	5,374,005	1,912,876	861,024	432,813	801,328	3,575,106
3	Sept.	4,472,453	3,099,055	1,012,290	8,581,104	2,612,876	1,222,141	632,813	801,328	4,912,906
4	Oct.	2,910,585	2,523,618	1,012,290	6,822,189	2,612,876	1,424,757	632,813	801,328	4,912,906
5	Nov.	3,719,201	2,448,618	1,012,290	6,698,588	2,612,876	1,443,214	632,813	801,328	4,912,906
6	Dec.	2,519,640	2,548,618	1,012,290	6,176,683	2,512,876	1,127,276	632,813	801,328	4,350,705
7	1959 - Jan.	2,094,808	3,031,039	1,012,290	7,330,504	3,012,876	1,507,188	632,813	801,328	4,850,705
8	Feb.	5,158,307	3,231,039	1,012,290	6,886,855	2,512,876	1,259,952	632,813	801,328	4,100,705
9	March	2,211,833	3,098,246	1,012,290	6,170,047	2,512,876	1,070,046	632,813	801,328	4,512,178
10	April	2,529,083	3,098,246	1,862,290	8,097,008	4,087,877	-	432,813	-	6,041,178
11	May	1,439,447	2,194,428	1,862,290	6,810,785	3,837,876	-	332,813	-	8,766,179
12	June	1,459,136	2,516,347	1,112,290	6,515,666	3,337,876	-	332,813	-	4,419,426
13	July	2,243,038	2,016,347	1,138,317	7,027,650	3,037,876	-	332,813	-	4,444,444
14	Average	$ 2,584,129	$ 2,607,428	$ 1,160,446	$ 6,813,480	$ 2,871,689	$ 815,050	$ 540,505	$ 616,304	$ 4,851,881

Docket No. G-19[illegible]
Exhibit 11
Schedule E
Witness: McGee

(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Morgan Company - N. Y.	First National City Bank - N.Y.	New York Trust Co. - N.Y.	First National Bank - Chicago	Harris Trust & Savings Bank - Chicago	Northern Trust Co. - Chicago	Mellon National Bank & Trust Co. - Pittsburgh	First National Bank - Boston	Morgan Guaranty Trust Co. - N.Y.	All Other Banks	Total
301,328	$ 4,075,106	$ 818,932	$ 2,108,139	$ 799,960	$ 1,435,000	$ 1,244,395	$ 1,071,413	$ -	$4,401,780	$33,019,507
301,328	3,575,106	318,932	1,550,876	524,960	935,000	1,058,688	821,413	-	2,882,743	24,762,471
301,328	4,912,906	668,932	2,095,623	724,960	1,177,004	2,084,891	971,413	-	5,614,669	40,684,458
301,328	4,512,906	668,932	1,759,394	724,960	1,177,004	1,359,306	971,413	-	4,273,035	34,187,406
301,328	4,512,906	668,932	1,778,185	724,960	1,177,004	1,922,877	971,413	-	5,175,080	36,330,285
301,328	4,350,705	668,932	1,512,304	624,960	1,027,004	1,473,575	971,413	-	3,757,183	31,717,600
301,328	4,850,705	668,932	1,965,512	624,960	1,027,004	2,015,471	971,413	-	4,852,380	36,399,223
301,328	4,100,705	668,932	1,579,845	624,960	1,027,004	2,213,824	971,413	-	5,428,335	38,110,478
301,328	4,512,178	668,932	1,711,015	724,960	1,277,004	2,029,004	971,413	-	3,752,399	33,150,284
-	8,041,178	668,932	2,218,346	674,960	877,004	2,447,423	871,413	4,264,668	6,185,161	44,356,402
-	8,766,179	468,932	2,042,186	474,960	777,005	1,753,667	721,413	3,221,606	5,334,073	40,037,660
-	4,419,426	368,932	1,662,675	474,960	677,004	1,422,186	671,413	2,731,690	3,848,456	31,550,870
-	4,444,444	368,932	1,545,673	474,960	677,004	1,462,113	671,413	2,664,586	5,997,529	34,102,695
316,304	$ 4,851,881	$ 592,009	$ 1,809,983	$ 630,729	$ 1,020,542	$ 1,729,340	$ 894,490	$ 930,965	$4,730,987	$35,259,957

Hearing Exhibit No. 13

TENNESSEE GAS TRANSMISSION COMPANY
RATE OF RETURN
1959 VS 1946

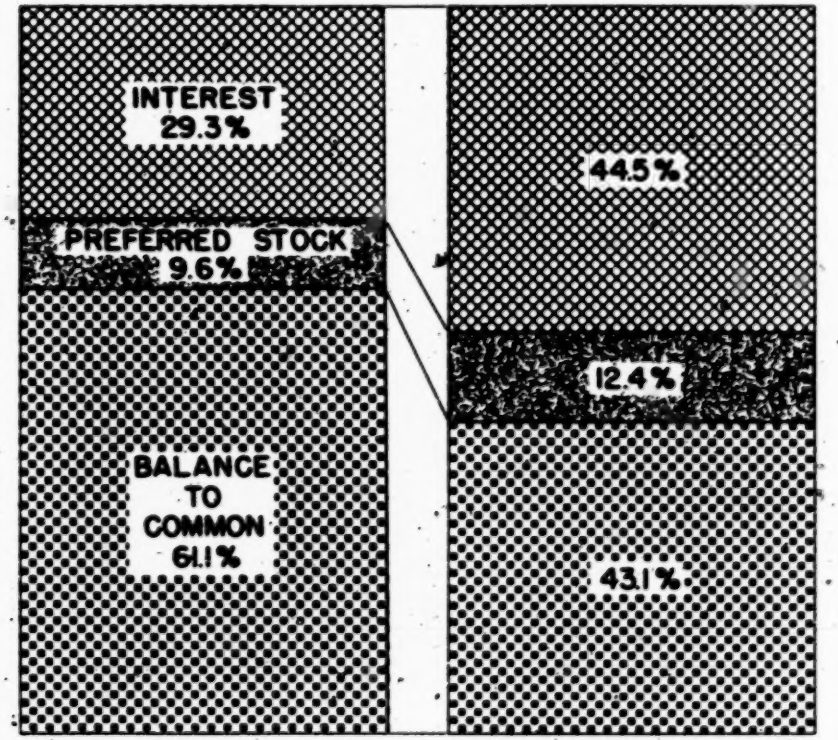
Line No.	Column 1 Particulars	(2) Capital Ratio	(3) Rate	(4) Return Element
1	JULY 31, 1959:			
2	Long-term debt	61.47%	4.22%	2.59%
3	First preferred stock	7.87	4.88	0.38
4	4.72% second preferred stock	3.80	4.88	0.19
5	Common equity (1)	26.86	10.57	2.84
6	Total	100.00%		6.00%
7	SEPTEMBER 30, 1946:			
8	Long-term debt	59.11%	2.59%	1.53%
9	First preferred stock	13.14	3.86	0.51
10	Common equity	27.75	10.57	2.93
11	Total	100.00%		4.97%

12 (1) Includes 4.50% series convertible second
13 preferred stock.

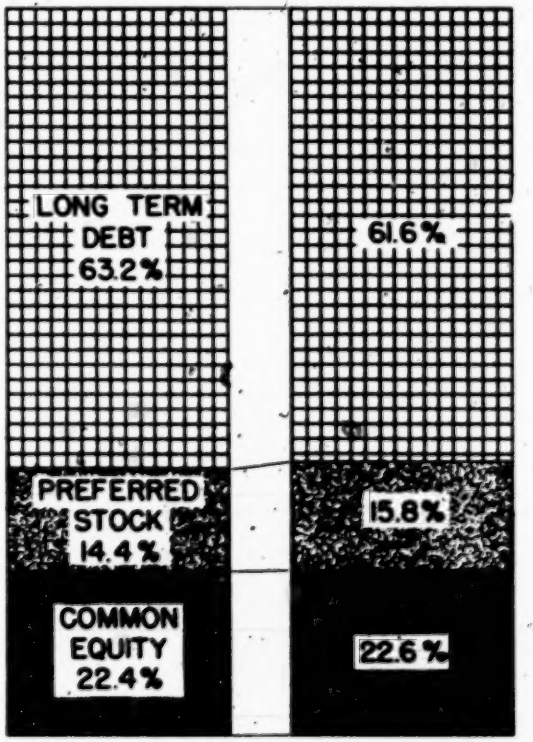
TENNESSEE GAS TRANSMISSION COMPANY

(2223)

DISPOSITION OF GROSS INCOME



AVERAGE CAPITALIZATION

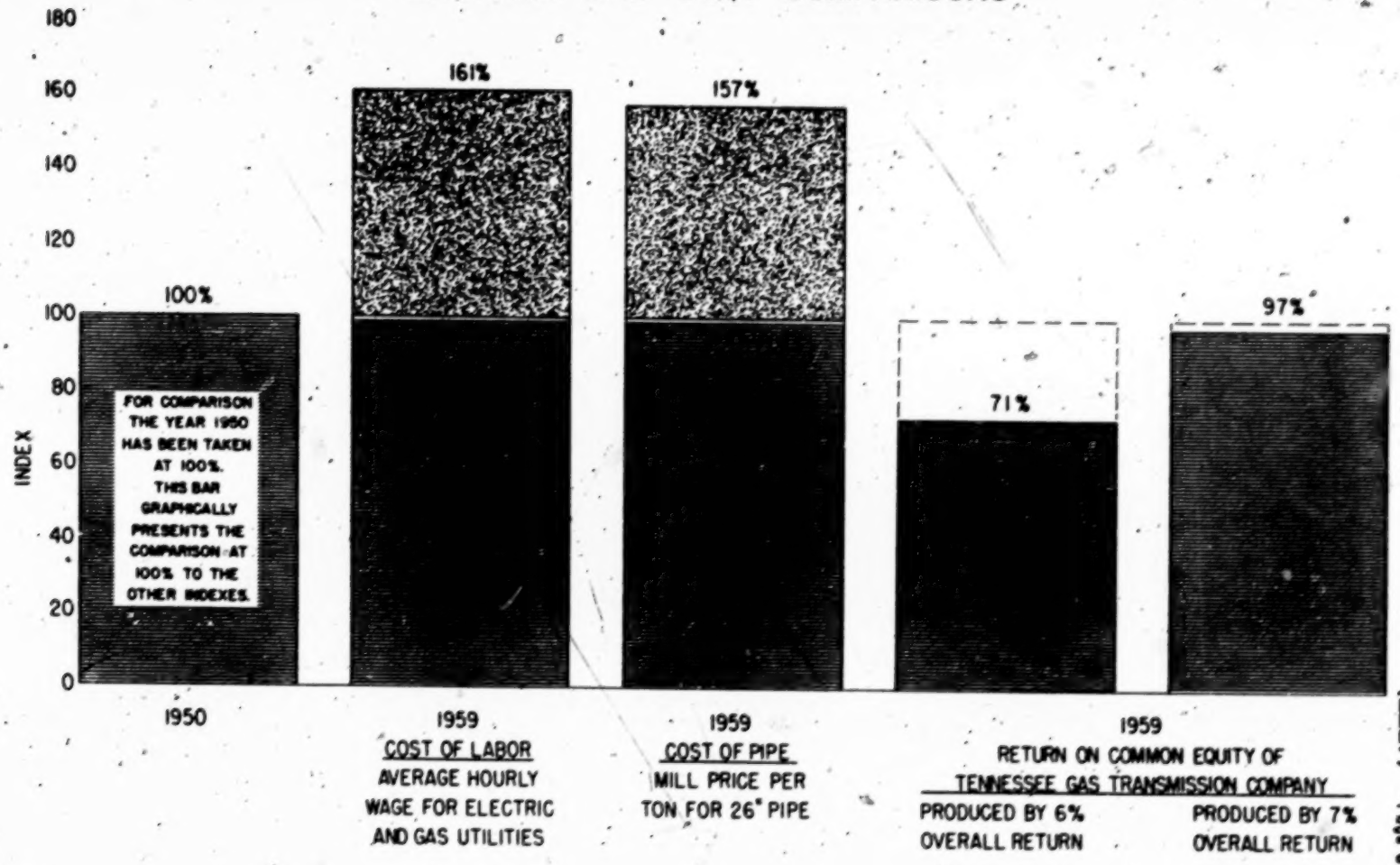


304

Page 2

TENNESSEE GAS TRANSMISSION COMPANY

EARNINGS AND COST COMPARISONS



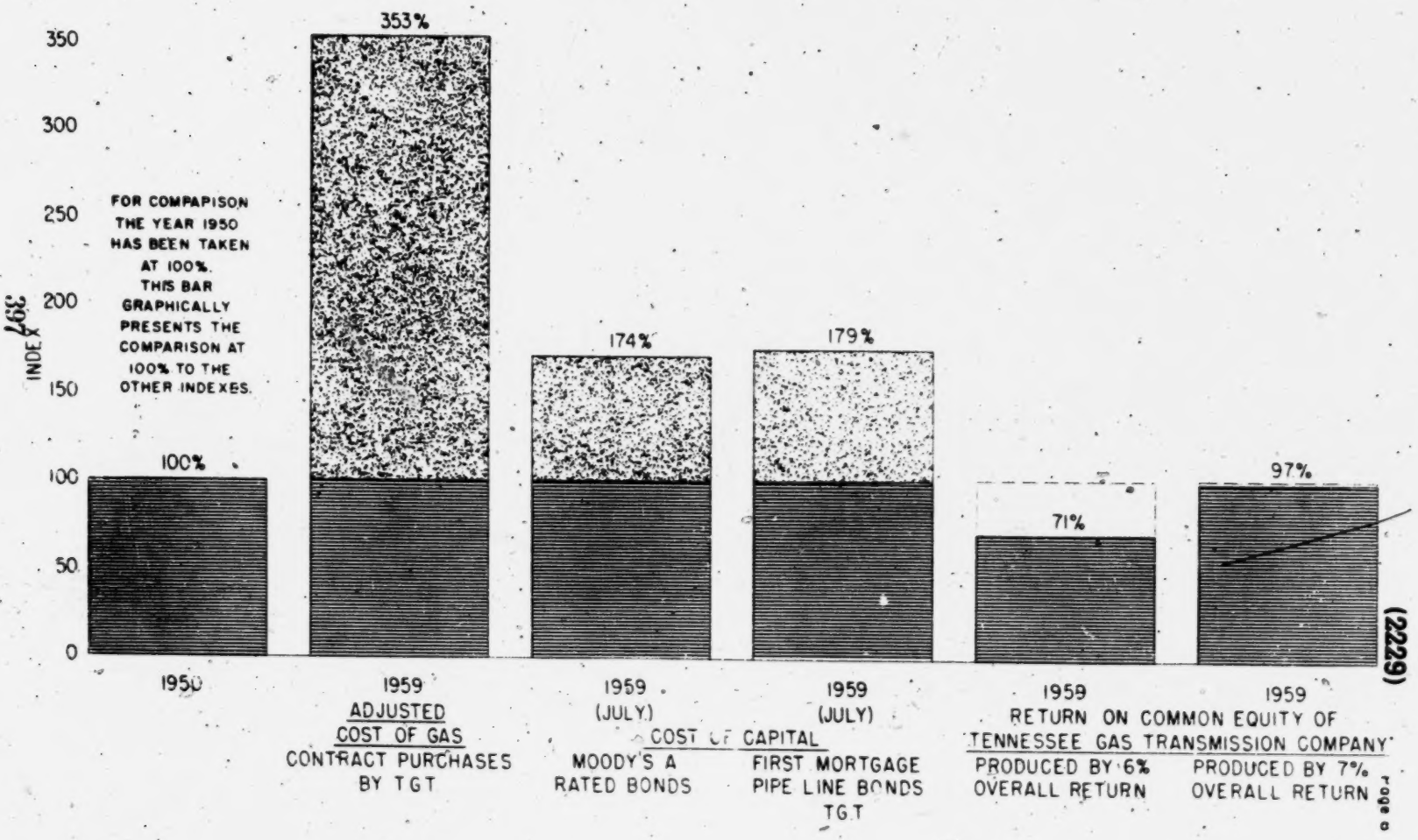
(2227)

TENNESSEE GAS TRANSMISSION COMPANY
EARNINGS AND COST COMPARISONS

Column 1	(2)	(3)	(4)
Particulars	1950	1959	Index (Column 3 ÷ Column 2)
Average hourly gross earnings for gas and electric utility workers per U. S. Department of Commerce 1957 Biennial Edition of Business Statistics and August, 1959 Survey of Current Business.	$ 1.60	$ 2.57	161%
Mill price per ton for 26" O.D. x 9/32" W.T. pipe per A. O. Smith Corporation in 1950 and National Tube Company in 1959.	$123.00	$192.88	157%
Earnings on common equity of Tennessee Gas Transmission Company produced by 6% overall rate of return based on 12/31/50 capitalization and 6% overall rate of return based on 10/31/59 capitalization.	15.54%	11.06%	71%
Earnings on common equity of Tennessee Gas Transmission Company produced by 6% overall rate of return based on 12/31/50 capitalization and 7% overall rate of return based on 10/31/59 capitalization.	15.54%	15.10%	97%

TENNESSEE GAS TRANSMISSION COMPANY

EARNINGS AND COST COMPARISONS



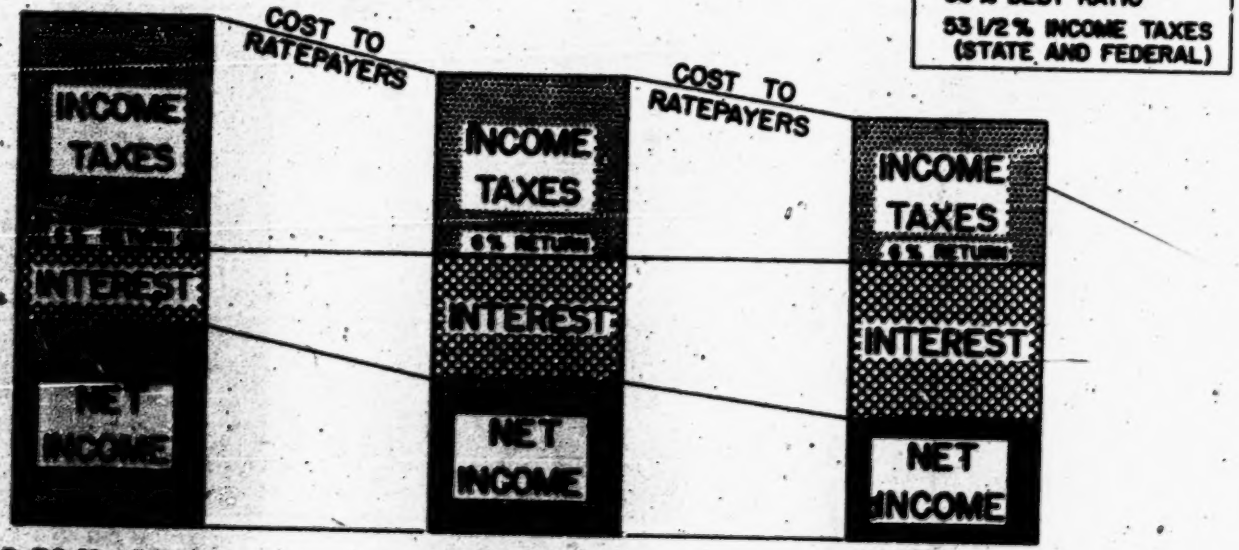
TENNESSEE GAS TRANSMISSION COMPANY
EARNINGS AND COST COMPARISONS

Column 1 Particulars	(2) 1950	(3) 1959	(4) Index (Column 3 ÷ Column 2)
Average cost of contract purchases @ 15.025 psia (twelve months ended December 1950, per books - twelve months ended July 31, 1959 as adjusted)	5.16¢	18.24¢	353%
Cost of capital - yield on Moody's A Rated Utility Bonds (September 1950 yield - July 1959 yield)	2.80%	4.88%	174%
Cost of capital - First Mortgage Pipeline Bonds (TGT 3% bonds due in 1970 sold 9/15/50 - TGT 5-1/4% bonds due in 1979 sold 7/29/59)	2.94%	5.27%	179%
Earnings on common equity of Tennessee Gas Transmission Company produced by 6% overall rate of return based on 12/31/50 capitalization and 6% overall rate of return based on 10/31/59 capitalization	15.54%	11.06%	71%
Earnings on common equity of Tennessee Gas Transmission Company produced by 6% overall rate of return based on 12/31/50 capitalization and 7% overall rate of return based on 10/31/59 capitalization	15.54%	15.10%	97%

TENNESSEE GAS TRANSMISSION COMPANY

RETURN AND INCOME TAX COST
RETURN LIMITED TO 6%

BASIS
$1,000,000 RATE BASE
63% DEBT RATIO
53 1/2% INCOME TAXES (STATE AND FEDERAL)



	2.59% DEBT	4.22% DEBT (HISTORICAL COST)	5.27% DEBT (CURRENT COST)
COST TO RATEPAYERS	$110,259	$98,445	$90,833
INCOME TAXES	50,259	38,445	30,833
RETURN	$60,000	$60,000	$60,000
INTEREST	16,317	26,586	33,201
NET TO STOCKHOLDERS	$43,683	$33,414	$26,799

(2231)

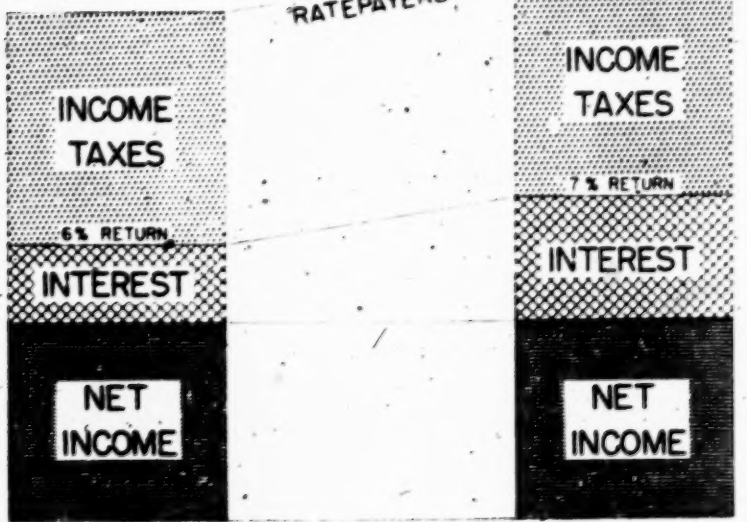
(20032)

[redacted] GAS TRANSMISSION COMPANY
EFFECT OF CHANGE IN INCOME COST OF BORROWED AND STOCKHOLDER
WITH RETURN LIMITED TO SIX PER CENT

Line No.	Column 1 Particulars	(2) Reference	(3) Historical Cost of Debt at 5.00%	(4) Cost of Debt at 6.00%	(5) Current Cost of Debt at 7.00%
1	CAPITAL COMPONENTS:				
2	Rate Base		$ 1,000,000	$ 1,000,000	$ 1,000,000
3	Total Debt (6%)		600,000	600,000	600,000
4	EFFECT OF CHANGE IN INTEREST COST:				
5	Return	6% of Line 2	$ 60,000	$ 60,000	$ 60,000
6	Interest	Line 3 x Rate	30,000	36,000	42,000
7	Net Income (46.5% of taxable income)	Line 5 - Line 6	$ 30,000	$ 24,000	$ 18,000
8	Federal and state income taxes (53.5% of taxable income)	53.5/46.5 x Line 7	$ 34,516	$ 27,613	$ 20,710
9	Cost to ratepayer	Line 5 + Line 8	$ 94,516	$ 87,613	$ 80,710

TENNESSEE GAS TRANSMISSION COMPANY

RETURN AND INCOME TAX COST
(NET INCOME MAINTAINED)



BASIS
$1,000,000 RATE BASE
63% DEBT RATIO
53 1/2% INCOME TAXES
(STATE AND FEDERAL)

	2.59% DEBT	4.22% DEBT (HISTORICAL COST)	
COST TO RATEPAYERS	$110,259	$120,528	(Increase $10,269)
INCOME TAXES	50,259	50,259	
RETURN	$ 60,000	$ 70,269	(Increase $10,269)
INTEREST	16,317	26,586	
NET TO STOCKHOLDERS	$ 43,683	$ 43,683	

401

(2233)

Page 12

TENNESSEE GAS TRANSMISSION COMPANY
EFFECT OF CHANGE IN INTEREST COST ON RATEPAYER AND STOCKHOLDER
NET INCOME MAINTAINED

Line No.	Column 1 Particulars	(2) Reference	(3) Historical Cost of Debt at 2.59%	(4) Historical Cost of Debt at 4.22%
1	CONSTANT CONDITIONS:			
2	Rate base		$ 1,000,000	$ 1,000,000
3	Total debt (63%)		630,000	630,000
4	EFFECT OF CHANGE IN INTEREST COST:			
5	Net income (46.5% of taxable income)	Exhibit 13, Page 11	$ 43,683	$ 43,683
6	Interest	Line 3 x Rate	16,317	26,586
7	Return	Line 5 / Line 6	$ 60,000	$ 70,269
8	Federal and state income taxes (53.5% of taxable income)	53.5/46.5 x Line 5	50,259	50,259
9	Cost to ratepayer	Line 7 / Line 8	$ 110,259	$ 120,528

TENNESSEE GAS TRANSMISSION COMPANY
COMPUTATION OF PER CENT RETURN
ON COMMON STOCK ALLOWED
OR CLAIMED IN RATE CASES

Line No.	Column 1 Particulars	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
		September 30, 1946 (G-606)			April 30, 1951 (G-1741)			June 30, 1952 (G-2052)			June 30, 1953 (G-2252)		
		Capital Ratios	Cost	Return	Capital Ratios	Cost	Return	Capital Ratios	Cost	Return	Capital Ratios	Cost	Return
1	Long-term debt	59.11%	2.59%	1.53%	63.42%	2.99%	1.90%	64.20%	3.24%	2.08%	64.84%	3.39%	2.20%
2	Preferred stock	13.14	3.86	0.51	13.94	4.39	0.61	15.68	4.67	0.73	13.22	4.67	0.62
3	Common equity	27.75	14.27	3.96	22.64	15.42	3.49	20.12	15.85	3.19	21.94	14.49	3.18
4	Return allowed or claimed			6.00%			6.00%			6.00%			6.00%
5													

Line No.	Particulars	August 31, 1954 (G-5259) Capital Ratios	Cost	Return	July 31, 1959 (G-19983) Capital Ratios	Cost	Return	October 31, 1959 Capital Ratios	Cost	Return
6	Long-term debt	65.35%	3.53%	2.31%	61.47%	4.22%	2.59%	61.22%	4.23%	2.59%
7	Preferred stock	14.85	4.92	0.73	11.67	4.88	0.57	11.70	4.88	0.57
8	Common equity	19.80	14.95	2.96	26.86(1)	14.30	3.84	27.08(1)	14.18	3.84
9	Return allowed or claimed			6.00%			7.00%			7.00%
10										
11	NOTE:									
12	(1) Includes 4.50% series convertible second preferred stock.									

TENNESSEE GAS TRANSMISSION COMPANY

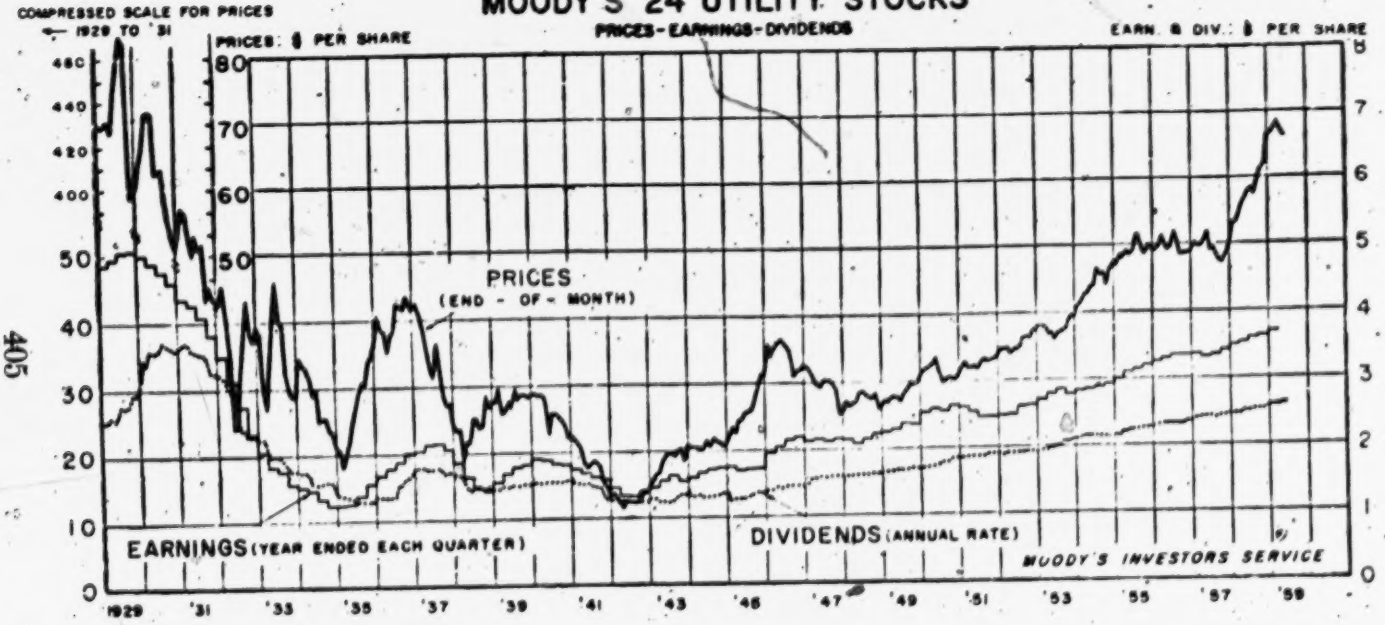
MOODY'S 24 UTILITY COMMON STOCKS

Year	Average Price Per Share	Earnings Per Share	Dividends Per Share	E. P. R.	Yield %	Pay-out
1958	$57.96	$3.63	$2.50	6.26%	4.33%	69%
1957	49.42	3.41	2.43	6.90	4.92	71
1956	49.62	3.35	2.32	6.75	4.68	69
1955	49.24	3.21	2.21	6.52	4.50	69
1954	44.30	2.94	2.13	6.64	4.81	72
1953	37.80	2.78	2.01	7.35	5.33	72
1952	35.48	2.62	1.91	7.38	5.39	73
1951	32.55	2.44	1.88	7.50	5.77	77
1950	31.23	2.62	1.76	8.39	5.66	67
1949	28.37	2.36	1.66	8.32	5.86	70
1948	27.34	2.22	1.60	8.12	5.85	72
1947	29.53	2.16	1.56	7.31	5.32	72
1946	34.05	2.19	1.43	6.43	4.23	65
1945	26.29	1.72	1.30	6.54	4.99	76
1944	20.90	1.75	1.31	8.37	6.28	75
1943	18.87	1.55	1.28	8.21	6.85	83
1942	12.92	1.40	1.26	10.84	9.76	90
1941	18.16	1.59	1.44	8.76	8.02	91
1940	25.64	1.81	1.54	7.06	6.07	85
1939	28.02	1.82	1.48	6.50	5.30	81
1938	24.27	1.42	1.50	5.85	6.27	106
1937	33.08	2.06	1.74	6.23	5.40	84
1936	40.28	2.01	1.48	4.99	3.67	74
1935	27.20	1.54	1.32	5.66	5.12	86
1934	27.84	1.22	1.60	4.38	5.85	131
1933	34.37	1.56	1.95	4.54	5.81	125
1932	36.40	2.30	2.63	5.32	7.52	114
1931	69.80	3.80	3.47	5.44	5.20	91
1930	107.67	4.59	3.55	4.26	3.45	77
1929	133.20	5.07	2.71	3.81	2.10	53

SOURCE: Moody's Public Utilities Manual

TENNESSEE GAS TRANSMISSION COMPANY

MOODY'S 24 UTILITY STOCKS



405

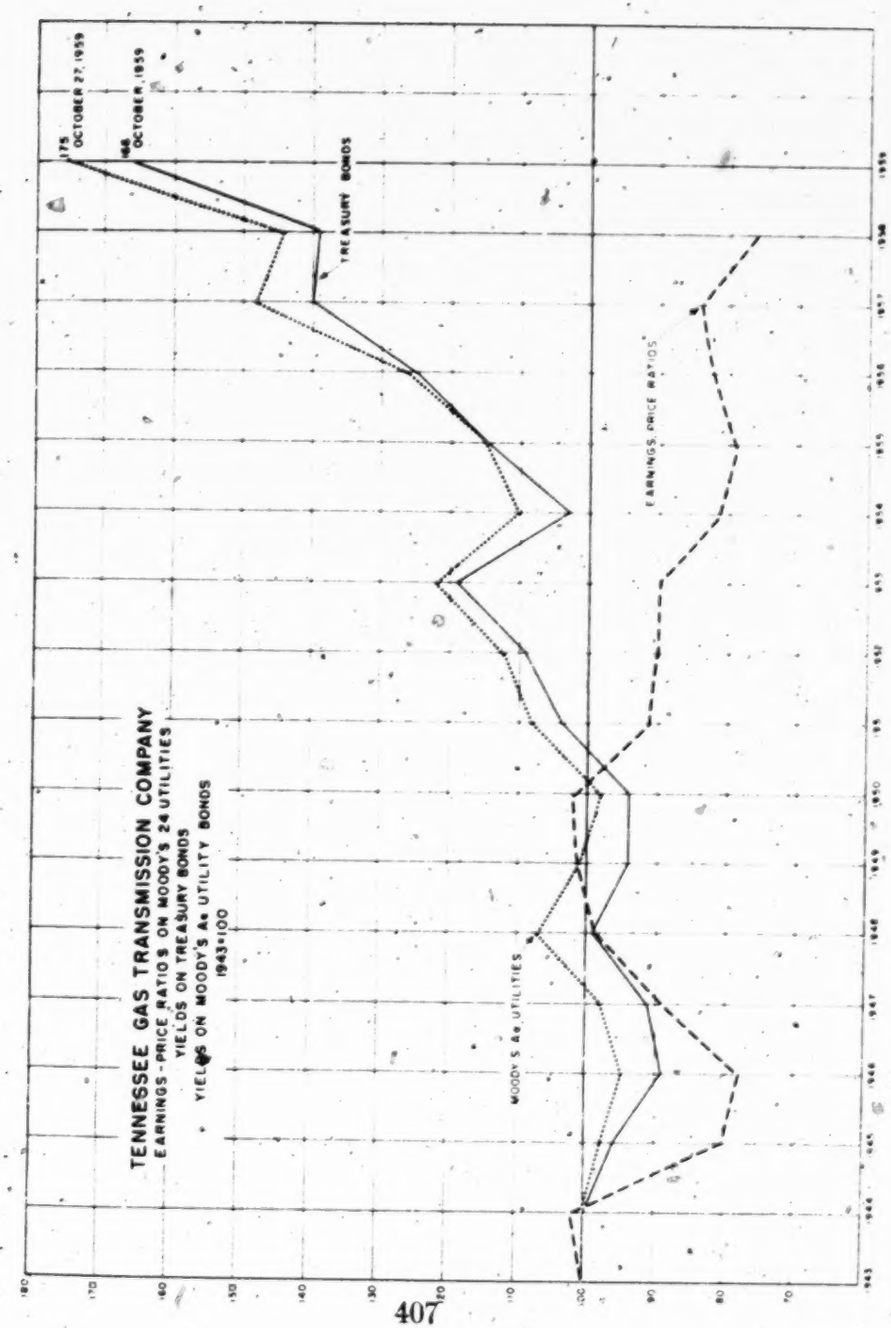
(2237)

PAGE 19

TENNESSEE GAS TRANSMISSION COMPANY

MOODY'S LIST OF STOCKS USED IN 24 UTILITIES AVERAGES

Baltimore Gas & Electric Co.
Boston Edison Co.
Carolina Power & Light Co.
Central Hudson Gas & Electric Corp.
Central Maine Power Co.
Cincinnati Gas & Electric Co.
Cleveland Electric Illuminating Co.
Commonwealth Edison Co.
Connecticut Light & Power Co.
Consolidated Edison Co. (N. Y.) Inc.
Dayton Power & Light Co.
Delaware Power & Light Co.
Detroit Edison Co.
Florida Power Corp.
Houston Lighting & Power Co.
Idaho Power Co.
Indianapolis Power & Light Co.
Pacific Gas & Electric Co.
Pennsylvania Power & Light Co.
Philadelphia Electric Co.
Public Service Co. of Colorado
Southern California Edison Co.
Tampa Electric Co.
Utah Power & Light Co.



TENNESSEE GAS TRANSMISSION COMPANY
COMPARISON OF EARNINGS - PRICE RATIOS
WITH BOND YIELDS

	U. S. Treasury Bonds		Moody's Aa Utilities		Moody's 24 Utilities	
	Yields	Index Number	Yields	Index Number	E. P. R.	Index Number
1943	2.47	100	2.73	100	8.21	100
1944	2.48	100	2.72	100	8.37	102
1945	2.37	96	2.67	98	6.54	80
1946	2.19	89	2.58	95	6.43	78
1947	2.25	91	2.67	98	7.31	89
1948	2.44	99	2.92	107	8.12	99
1949	2.32	94	2.76	101	8.32	101
1950	2.32	94	2.68	98	8.39	102
1951	2.57	104	2.95	108	7.50	91
1952	2.68	109	3.05	112	7.38	90
1953	2.93	119	3.32	122	7.35	90
1954	2.55	103	3.00	110	6.64	81
1955	2.84	115	3.13	115	6.52	79
1956	3.08	125	3.43	126	6.75	82
1957	3.47	140	4.03	148	6.90	84
1958	3.43	139	3.92	144	6.26	76
Oct. 1959	4.11	166	-	-		
Oct. 27, 1959	-	-	4.79	175		

TENNESSEE GAS TRANSMISSION COMPANY
RATE OF RETURN
AS OF OCTOBER 31, 1959

Line No.	Column 1 Particulars	(2) Amount	(3) Percent	(4) Rate	(5) Return Element
1	Long-term debt	$ 702,191,000	61.23%	4.23%	2.59%
2	First preferred stock	90,177,900	7.86	4.89	0.38
3	Second preferred stock	44,000,000	3.84	4.88	0.19
4	Common equity	310,570,921 (1)	27.08	14.28	3.86
5	Overall	$1,146,939,821	100.00%		7.00%
6	NOTE: (1) Includes 4.50% series convertible second preferred stock.				

TENNESSEE GAS TRANSMISSION COMPANY
COMPUTATION OF PER CENT RETURN ON COMMON EQUITY
ESTIMATED AS OF SEPTEMBER 30, 1960

Column	(2)	(3)	(4)	(5)
Particulars	Amount Outstanding	Capital Ratios	Cost	Return
Long-term debt	$ 707,906,000	56.49%	4.35%	2.46%
First preferred stock	$ 85,300,000	7.13%	4.89%	0.35%
4.72% Second preferred stock	$ 44,000,000	3.51%	4.88%	0.17%
5.00% Second preferred stock	29,517,800	2.36	5.17	0.12
Total second preferred stock	$ 73,517,800	5.87%	5.00%	0.29%
Common equity	$ 382,343,623(1)	30.51%	12.78%	3.90%
Total capitalization	$1,253,067,423	100.00%		7.00%

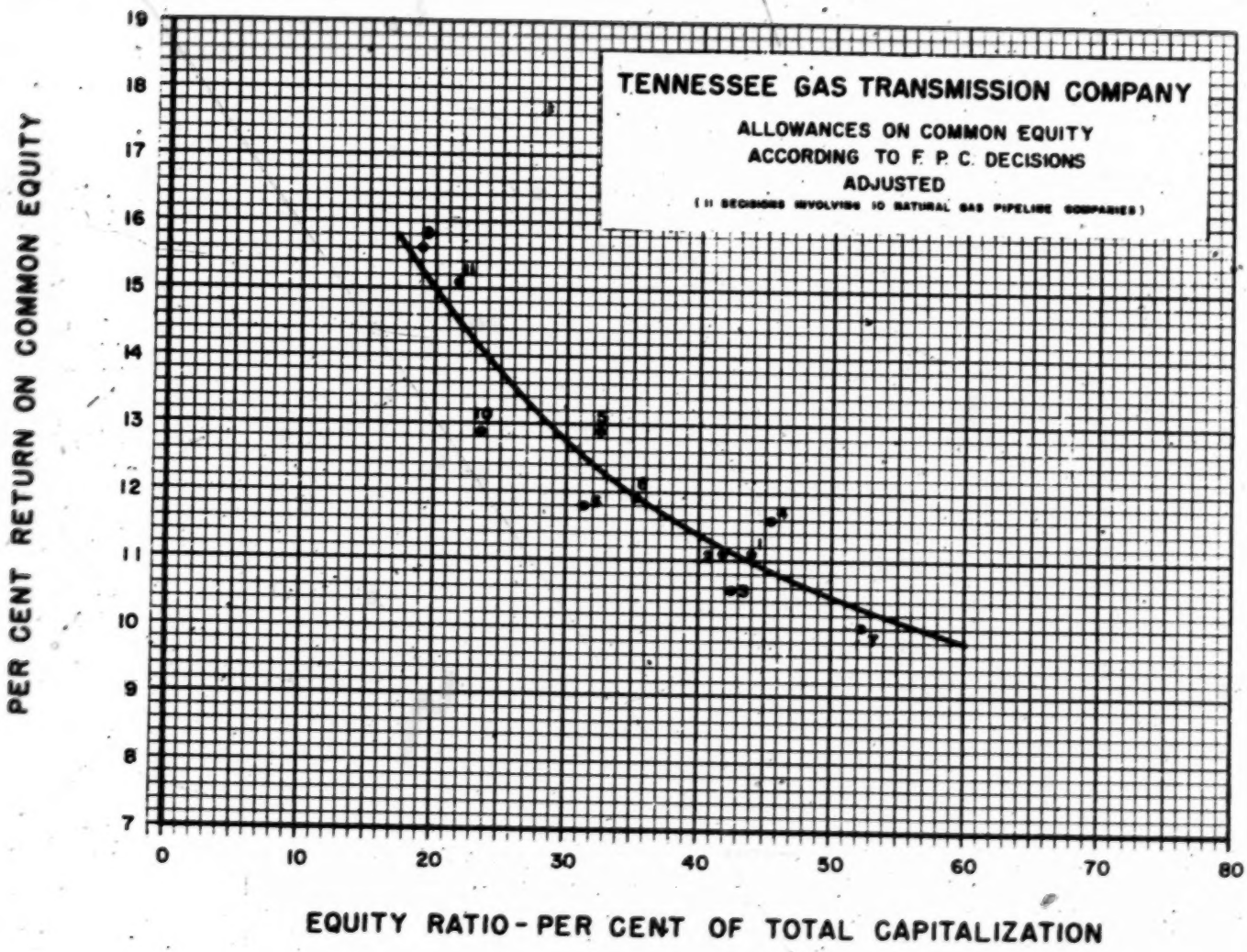
NOTE: (1) Includes 4.50% series convertible second preferred stock.

TENNESSEE GAS TRANSMISSION COMPANY
FPC RATE CASES
RETURNS ON COMMON EQUITY - ADJUSTED

411

Line No.	Column 1 Citation	(2) Company	(3) Year of Balance Sheet Data	(4) Equity Ratio	(5) Allowed on Equity	(6) Annual Average Yield on Moody's Aaa Utility Bonds	(7) Increase in Yield to 1959 (4.49% - Column 6)	(8) Allowance on Equity Adjusted for Increases in Pure Cost of Money (Column 5 + Column 7)
1	11 FPC 132	Northern Natural Gas Company	1950	44 %	9.25%	2.62%	1.87%	11.12%
2	11 FPC 298	Mississippi River Fuel Corporation	1951	42	9.50	2.88	1.61	11.11
3	11 FPC 339	Colorado Interstate Gas Company	1951	42.5	8.95	2.88	1.61	10.56
4	12 FPC 271	United Fuel Gas Company	1952	45.5	10.11	2.99	1.50	11.61
5	OP. No. 269	Panhandle Eastern Pipe Line Company	1952	32.6	11.41	2.99	1.50	12.91
6	OP. No. 275	Michigan-Wisconsin Pipe Line Company	1952	31.5	10.3	2.99	1.50	11.80
7	14 FPC 522	Natural Gas Pipeline Company of America	1953	52.5	9.0	3.24	1.25	10.25
8	14 FPC 385	United Gas Pipe Line Company	1953	35.4	10.68	3.24	1.25	11.93
9	OP. No. 278	El Paso Natural Gas Company	1953	19.0	14.4	3.24	1.25	15.65
10	19 FPC 1012	Colorado Interstate Gas Company	1957	23.6	12.29	3.96	0.53	12.82
11	18 FPC 439	Tennessee Gas Transmission Company	1955	21.8	13.71	3.09	1.40	15.11

(2243)


TENNESSEE GAS TRANSMISSION COMPANY
ALLOWANCES ON COMMON EQUITY
ACCORDING TO F. P. C. DECISIONS
ADJUSTED
(11 DECISIONS INVOLVING 10 NATURAL GAS PIPELINE COMPANIES)
PER CENT RETURN ON COMMON EQUITY
EQUITY RATIO - PER CENT OF TOTAL CAPITALIZATION
19
18
17
16
15
14
13
12
11
10
9
8
7
0
10
20
30
40
50
60
70
80

Docket No. G-

Docket No. G-19983
Witness: Katzenbach

TENNESSEE GAS TRANSMISSION COMPANY

CAPITAL RATIOS
at Selected Balance Sheet Dates

Line		Sept. 30, 1946 (G-606) Capital Ratios	Cost	Return	April 30, 1951 (G-1741) Capital Ratios	Cost	Return	June 30, 1952 (G-2052) Capital Ratios	Cost	Return
1	Long-Term Debt	59.11%	2.59%	1.53%	63.42%	2.99%	1.90%	64.20%	3.24%	2.08%
2	Preferred Stock	13.14	3.86	0.51	13.94	4.39	0.61	15.68	4.67	0.73
3	Common Equity	27.75	14.27	3.96	22.64	15.42	3.49	20.12	15.85	3.19
4	Return Allowed			6.00%			6.00%			6.00%

Line		June 30, 1953 (G-2252) Capital Ratios	Cost	Return	March 31, 1954 (G-2434) Capital Ratios	Cost	Return	August 31, 1954 (G-5259) Capital Ratios	Cost	Return
5	Long-Term Debt	64.84%	3.39%	2.20%	65.64%	3.52%	2.31%	65.35%	3.53%	2.31%
6	Preferred Stock	13.22	4.67	0.62	13.84	4.86	0.67	14.85	4.92	0.73
7	Common Equity	21.94	14.49	3.18	20.52	14.73	3.02	19.80	14.95	2.96
8	Return Allowed			6.00%			6.00%			6.00%

Line		October 31,1956(G-11980) Capital Ratios	Cost	Return	July 31, 1958 (G-17166) Capital Ratios	Cost	Return	July 31, 1959 (G-19983) Capital Ratios	Cost	Return
9	Long-Term Debt	63.86%	3.68%	2.35%	61.72%	4.01%	2.47%	61.47%	4.22%	2.59%
10	Preferred Stock	10.60	4.87	0.52	9.03	4.88	0.44	7.87	4.88	0.38
11	4.72% Second Preferred Stock	--	--	--	--	--	--	3.80	4.88	0.19
12	Common Equity	25.54(1)	14.60	3.73	29.25(1)	13.30	3.89	26.86(1)	14.30	3.84
13	Return Allowed of Claimed			6.60%			6.80%			7.00%

14 Note: (1) Includes all Convertible Second Preferred Stock except 4.72% Series.

413

Hearing Exhibit No. 14 (2246)

Page

Docket No. G-19983

Witness: Katzenbach

(2247)

Tennessee Gas Transmission Company
Computation of Coverage Ratios
for Interest on Long Term Debt

Line	(1) Balance Sheet Date	(2) Capital Ratio Long Term Debt	(3) Cost of Long Term Debt	(4) Return Element	(5) Interest 6%	(6) 6.6%	(7) Coverage Ratio 6.8%	(8) 7%
1	September 30, 1946	59.11%	2.59	1.53	3.92	..	..	..
2	April 30, 1951	63.42	2.99	1.90	3.16	..	..	..
3	June 30, 1952	64.20	3.24	2.08	2.88	..	..	..
4	June 30, 1953	64.84	3.39	2.20	2.73	..	..	..
5	March 31, 1954	65.64	3.52	2.31	2.60	..	..	..
6	August 31, 1954	65.35	3.53	2.31	2.60	..	..	..
7	October 31, 1956	63.86	3.68	2.35	(2.55)	2.81	..	..
8	July 31, 1958	61.72	4.01	2.47	(2.43)	..	2.75	..
9	July 31, 1959	61.47	4.22	2.59	(2.31)	..	..	2.70

Docket No. G-19983

Witness: Katzenbach

Tennessee Gas Transmission Company
Computation of Coverage Ratios
for Interest on Long Term Debt

(Based on Average Long Term Debt Ratio of 63.29% 1946-1959)

Line	(1) Balance Sheet Date	(2) Cost of Long Term Debt	(3) Return Element	(4)	(5)	(6)	(7)
				Interest Coverage Ratio			
				6%	6.6%	6.8%	7.0%
1	September 30, 1946	2.59%	1.64%	3.66	..	..	..
2	April 30, 1951	2.99	1.89	3.17	..	..	..
3	June 30, 1952	3.24	2.05	2.93	..	..	..
4	June 30, 1953	3.39	2.15	2.79	..	..	..
5	March 31, 1954	3.52	2.23	2.69	..	..	..
6	August 31, 1954	3.53	2.23	2.69	..	..	..
7	October 31, 1956	3.68	2.33	(2.57)	2.83	..	..
8	July 31, 1958	4.01	2.54	(2.36)	..	2.68	..
9	July 31, 1959	4.22	2.67	(2.25)	..	..	2.62

415

(2248)

Docket No. G-19983

Witness: Katzenbach

FINANCIAL AND MARKET RATIOS
of Certain Public Utility Companies

	(1) Common Equity Capital 12/31/57 (000)	(2) Common Equity Capital 12/31/58 (000)	(3) Average Common Equity Capital (000)	(4) Net Inc. for Com. 1958 (000)	(5) % Return on Avg. Common Equity Capital	(6) Price 4/1/59	(7) Price 12/17/59	(8) Net Earns. Per Share 1958	(9) P/E Ratio Price 4/1/59	(10) P/E Ratio Price 12/17/59	(11) E/P Ratio Price 4/1/59	(12) E/P Ratio Price 12/17/59	(13) Common Equity as % Total Average Capital	(14) Ind. Divd. at 4/1/59	(15) Divd. Yield	(16) Divd. Payout % 1958 Earns.
GROWTH STOCKS																
Arizona Public Service	$ 44,523	$ 52,842	$ 48,683	$ 5,863	12.0%	40 1/2	37 1/8	$1.88	21.5x	19.7x	4.6%	5.1%	30.4%	$1.20	3.8%	63.8%
Central Louisiana Electric	18,550	23,719	21,134	2,785	13.2	47	46 5/8	2.21	21.3	21.1	4.7	4.7	31.6	1.80	3.8	81.4
Central & South West	196,921	205,617	201,269	26,184	13.0	64 1/2	63 1/2	2.54	25.4	25.0	3.9	4.0	36.9	1.80	2.8	70.9
Florida Power & Light	142,251	182,432	162,342	23,158	14.3	46 3/4*	52 3/4	1.76*	26.6	30.0	3.8	3.3	43.7	0.82*	1.8	46.6
Gulf States Utilities	80,208	94,442	87,325	12,242	14.0	32 *	30 1/4	1.29*	24.9	23.4	4.0	4.3	32.1	0.90*	2.8	69.8
Houston Lighting & Power	131,499	140,516	136,008	19,818	14.6	70	68 3/8	2.94	23.8	23.3	4.2	4.3	41.8	1.60	2.3	54.4
Oklahoma Gas & Electric	71,183	70,914	71,049	9,515	13.4	32	30 1/2	1.45	22.1	21.0	4.5	4.8	31.7	1.00	3.1	69.0
South Carolina Elec. & Gas	59,312	72,750	66,031	7,610	11.5	35 1/4	35 3/8	1.87	18.9	18.9	5.3	5.3	34.9	1.30	3.7	69.5
Texas Utilities	237,863	275,642	256,753	34,306	13.4	69	69 1/2	2.73	25.3	25.5	4.0	3.9	40.0	1.76	2.6	64.5
Virginia Electric & Power	196,014	209,807	202,911	23,537	11.6	37 7/8	38 3/4	1.66	22.8	23.3	4.4	4.3	37.8	1.10	2.9	66.3
Average					13.1%						4.3%	4.4%	36.1%		2.9%	65.6%
GROWTH & INCOME STOCKS																
Baltimore Gas & Electric	$168,529	$172,624	$170,577	$16,646	9.8%	24 1/4*	26 1/8	$1.20*	20.2x	21.8x	4.9%	4.6%	44.4%	$0.90*	3.7%	75.0%
Central Illinois Pub. Svce.	64,667	67,733	66,200	8,884	13.4	43 3/4	43 3/4	2.56	17.1	17.1	5.9	5.9	37.9	1.76	4.0	68.8
Cleveland Electric Illum.	167,286	178,376	172,831	17,526	10.1	52 1/4	48 1/4	2.60	20.1	18.6	5.0	5.4	48.9	1.60	3.1	61.5
Columbus & So. Ohio Electric	61,474	62,585	62,030	5,353	8.6	36 1/4	41 1/8	2.02	17.9	20.4	5.6	4.9	31.1	1.60	4.4	79.2
Illinois Power	115,921	119,132	117,527	13,455	11.4	41 1/2	43 7/8	2.10	19.8	20.9	5.1	4.8	35.7	1.50	3.6	71.4
Kansas Gas & Electric	37,553	39,659	38,606	5,423	14.0	44 1/2	45 3/4	2.52	17.7	18.2	5.7	5.5	30.8	1.48	3.3	58.7
N.Y. State Electric & Gas	108,560	116,214	112,387	13,024	11.6	27 1/4*	26 1/2	1.86*	14.6	14.2	6.9	7.0	36.0	1.10*	4.0	59.1
No. Indiana Public Service	80,067	102,149	91,108	11,556	12.7	49 1/2	51 3/4	2.77	17.9	18.7	5.6	5.4	36.1	2.00	4.0	72.2
Pacific Gas & Electric	654,094	732,432	693,263	66,974	9.7	63 3/4	64 1/2	3.74	17.6	17.2	5.7	5.8	34.4	2.60	4.0	69.5
Average					11.3%						5.6%	5.5%	37.3%		3.8%	68.4%
INCOME STOCKS																
Cincinnati Gas & Electric	$100,075	$115,298	$107,687	$14,214	13.2%	34 3/4	32	$1.85	18.8x	17.3x	5.3%	5.8%	39.1%	$1.50	4.3%	81.1%
Consolidated Edison of N.Y.	655,243	729,574	692,408	55,780	8.1	62 3/4	59	3.74	16.8	15.8	6.0	6.3	39.2	2.80	4.5	74.9
Kansas City Power & Light	75,972	78,729	77,351	8,218	10.6	52 3/4	47 1/4	3.05	17.3	15.5	5.8	6.5	36.1	2.20	4.2	72.1
Public Service Elec. & Gas	303,864	341,162	322,513	27,609	8.6	42 1/2	36 5/8	2.26	18.8	16.2	5.3	6.2	30.9	1.80	4.2	79.6
Northern States Power	152,613	150,144	151,379	18,518	12.2	24 1/4	23 5/8	1.30	18.7	18.2	5.4	5.5	32.7	1.10	4.5	84.6
West Penn Electric	154,993	168,970	161,882	20,269	12.5	37	36 1/8	2.25	16.4	16.1	6.1	6.2	33.0	1.60	4.3	71.1
Average					10.9%						5.7%	6.1%	35.2%		4.3%	77.2%

* Adjusted for 2 -for-1 stock split.
+ Adjusted for 2.1-for-1 stock split.
Source: Annual Reports; Moody's Investors Service.

Docket No. G-19983

Witness: Katzenbach

RATE OF RETURN CALCULATIONS - ELECTRIC UTILITY INDUSTRY

(Dollar Amounts Expressed in Millions)

Line		(1) 1958	(2) 1957	(3) 1956	(4) 1955	(5) 1954	(6) 1953	(7) 1952	(8) 1951	(9) 1950	(10) 1949	(11) 1948
1	Total Capital & Surplus	$16,685	$15,557	$14,621	$13,753	$13,012	$12,119	$11,396	$10,310	$ 9,613	$ 8,808	$ 8,001
2	Preferred Capital Stock	4,023	3,774	3,687	3,462	3,281	3,084	2,897	2,731	2,575	2,392	2,179
3	Common Equity	12,662	11,783	10,934	10,291	9,731	9,035	8,499	7,579	7,038	6,416	5,822
4	Total Long Term Debt	18,579	17,051	15,231	14,330	13,322	12,040	10,809	9,994	9,189	8,572	7,719
5	Total Capitalization	35,264	32,608	29,852	28,083	26,334	24,159	22,205	20,3[illegible]	18,802	17,380	15,720
6	Average Common Equity	12,223	11,359	10,613	10,011	9,383	8,767	8,039	7,308	6,727	6,119	
7	Average Total Capitalization	33,936	31,230	28,968	27,209	25,247	23,182	21,254	19,553	18,091	16,550	
8	Gross Income	2,074	1,916	1,808	1,683	1,526	1,369	1,266	1,122	1,101	1,022	
9	Net Income	1,519	1,413	1,332	1,244	1,134	1,030	947	814	822	757	
10	Preferred Dividend Appropriations	178	168	160	151	144	138	129	119	111	103	
11	Net for Common	1,341	1,245	1,172	1,093	990	892	818	695	711	654	
12	Gross Income as % of Average Total Capitalization	6.11%	6.14%	6.24%	6.19%	6.04%	5.91%	5.96%	5.74%	6.09%	6.18%	
13	Net for Common as % of Average Common Equity	10.97%	10.96%	11.04%	10.92%	10.55%	10.17%	10.17%	9.52%	10.57%	10.69%	
14	Average Common Equity % of Total Capitalization	36.0%	36.4%	36.6%	36.8%	37.2%	37.8%	38.0%	37.4%	37.2%	37.0%	

Source: The amounts are taken from and the ratios are based upon the composite balance sheets and income accounts of "Privately Owned Class A and Class B Electric Utilities in the United States", compiled and published by the Federal Power Commission.

2259

Hearing Exhibit No. 18

THE PLACE OF NATURAL GAS IN THE NATION'S ECONOMY, AND OF ITS SECURITIES IN THE TRUST PORTFOLIO

By

Gardiner Symonds
Chairman and President
Tennessee Gas Transmission Company

Before the
Forty-first Mid-Winter Trust Conference
Trust Division, American Bankers Association
New York City
February 10, 1960

2260

THE PLACE OF NATURAL GAS IN THE NATION'S ECONOMY AND OF ITS SECURITIES IN THE TRUST PORTFOLIO

I— Natural Gas in the Nation's Economy

One of the least understood but most important facts of today, in my opinion, is the part played in our lives and our economy by the nation's three basic sources of fuel energy.

Almost 40% of all the annual energy consumption in the world occurs in the United States, although we have only 6% of the population of the globe and 7% of its land. It is well-known that we in this country enjoy the world's highest standard of living. It is little known that this results from the huge supply of fuel energy available, and the skill of our engineers and technicians in putting it to use.

(2260)

Machines, powered by fossil fuels either directly (or indirectly, by creating electricity, for example) do over 95% of the work done in our nation—work which in equivalent hand labor would require 80 times as many people as are now alive on earth.

Our fossil fuels, so called because of their origin, are three in number.

Coal was the first to be utilized. It helped usher in America's industrial age, powering steam-driven machinery that industrialized the United States faster than any other country in history. Until recent years it fueled our railroads, opening up our country for settlement and providing transportation for people, goods and raw material to all parts of the nation.

Oil became known to industry with the Drake Well in 1859. It became available in volume after Spindletop in 1901. Fueling the internal combustion engine, it put America first on auto wheels. And in this century, it put a good many of us on airplane wings. It led to our modern highway system. Possibly more than any one substance, it changed the American way of life.

2261

Natural Gas once was the unwanted ugly duckling of fuels, a stepchild of oil. Huge quantities of it were piped away from oil wells and as a nuisance were wasted in fiery flares which burned day and night. Technological advances in metallurgy and welding made big, long-distance pipelines possible. Then the ugly duckling became a swan, the fuel preferred over any other and piped everywhere large concentrations of population exist. Its growth and expansion have become one of the great industrial success stories of our generation.

Natural gas is now ranked as the fifth industry in the nation in gross assets. It probably has grown faster than any other major industry in the past 20 years.

Its growth has been based on that of the transmission lines—such as Tennessee Gas Transmission Company, with which I am associated and which, incidentally, is one of the wholesale suppliers of gas to New York; and another supplier of this city, Transcontinental Gas Pipeline Company. Another example is El Paso Natural, a major natural gas wholesaler to California.

Since 1944, when the first Tennessee Gas pipeline commenced operations, the natural gas industry has tripled, doubling in the last 10 years. I am glad to be able to say that our growth since 1944 has been four times that of the industry, since we now transport 12½ times as much gas through our system as we could or did through that first pipeline.

And what of our two other major fuels in those periods? Oil, since 1944, has enjoyed more than a 50% growth, of which 40% has occurred in the past 10 years. Coal is down 37% from 1944, most of which also has occurred in the past 10 years.

In the 12 months of calendar 1959, it is estimated that natural gas consumption rose between 9 and 10%. This was about twice the 5% increase registered by oil. Coal, meantime, just about held even with 1958 both in BTU's produced and consumed.

2262

But since the other two fuels were increasing their volume of heat units or BTU's, coal declined in its competitive position. Our preliminary figures indicate approxi-

mately these figures for the 1959 contribution to over-all fuel usage:

Oil,	43% of consumption;	38% of production
Gas,	32% of consumption;	33% of production
Coal,	25% of consumption;	29% of production
	100%	100%

The place of natural gas as we enter 1960, then, is that of the second most utilized of the nation's three great fuels, which together not only provide the basic energy for our industrial might, but also the power for our modern-day appliances which make life more comfortable, convenient and free of hand labor than ever before here or elsewhere.

But the progress of natural gas to today's important position not been free of troubles or problems, nor will it be in the future. Let's look at some industry developments and problems.

Regulation is one of the industry's problems. Not so much the fact of regulation, for the industry has grown during regulation; some would say, despite it. But in all fairness I think it has helped us in the long-lines part of the industry to keep our growth orderly and sound.

But the amount of regulation, the complexity of it, the time lag between applications and rulings, all add up to something that takes a lot of industry thought, time and money, which means added costs to consumers. The Federal Power Commission shows awareness of most of its problems. But many of them stem from the Commission's task—starting with 1954—of regulating producers' gas prices in the field. And *that* problem they definitely have not solved.

Opinions about regulation vary widely, as these two public statements made about the same time recently will prove:

First, a congressman from a gas-importing and consuming state made a speech at a FPC hearing claiming the FPC should be investigated by Congress for not preventing more effectively the rise in producers' prices of gas in the field.

Second, an oil industry spokesman in a gas producing and exporting state issued a statement contending that in producers' rate cases before the FPC, gas is not being allocated a large enough part of the cost of drilling for oil and gas, i.e., that gas-field prices are being kept too low. He predicted that this would reduce producers' incentive to find gas, that reserves would decline and consumers would suffer.

In other words, one man said not enough regulation is going on, the other said too much, or perhaps the wrong kind.

The year 1960 should see several developments in gas regulation. The FPC will rule in the Phillips Case, that 1954 Supreme Court decision which put producers under regulation for the first time. The Commission now is studying Examiner Zwerdling's recommended decision, which in general would prescribe a public utility type cost of service formula.

No matter what the FPC rules, it seems certain to be appealed.

• • • •

The Third Circuit Court of Appeals decision in the Transco-Consolidated Edison transportation case is important to the industry. The FPC had denied a certificate. The Court reversed and directed a certificate be issued, and the FPC now plans to appeal.

(2263)

If the court is upheld, it will strengthen the ability of gas pipelines to maintain high load factor operations by selling or transporting valley gas for industrial use. Such sales make for the most efficient operation of a pipeline system, at the lowest MCF-mile transportation cost.

2264

The Court reversal was based on the position that the FPC had no right to assert authority over end-use of gas, as they did in deciding the case.

* * * *

Also this year will see an urge for government regulation of the end-use of gas as the real goal of the controversial drive of the coal industry for what they call a government fuels policy. It appears to be an attempt to achieve by regulation or legislation an advantage over the other two fuels which coal has been unable to gain in a free market.

Secretary of the Interior Seaton has said conversely that consumption of fuels should continue to be determined by such forces as relative costs at specific locations, efficiency of use, dependability of supply, cleanliness, convenience and ease of control.

* * *

As to a *natural gas bill* to free producers from regulation, the chance for passage in this election year is nonexistent.

Ownership of the tidelands is before the Supreme Court for a decision in 1960. For such companies as ours, which is drilling in the tidelands, settlement of the matter once and for all would simplify and facilitate business procedures. The ownership issue does not stop development, however.

For many gas companies, including ours, the most serious and important phase of regulation affecting our business is that of gas sales rates. And in that field, it is the problem of rate of return that is crucial. The annual cost of debt capital to us and all other companies regulated as utilities has risen steadily over the past several years. At the same time a broad improvement has occurred in the general position of the U. S. saver and investor, so that recently individuals have had the opportunity to take their dollars out of their savings accounts and get

2265

5% on traditionally the most conservative investment of all, government bonds.

At such a time, I cannot overemphasize to you and to the Federal Power Commission that increases in the cost of both debt and equity capital—not merely costs projected for future expansion, but costs actually experienced—*must* be recognized. And the recognition should be in the form of a compensating upward adjustment in rate of return.

Otherwise the increased debt cost comes directly out of the pocket of the security holders. As to the common stock, that is easy, because it is a net deduction. But it also affects greatly the debt securities of the gas companies, inasmuch as it again reduces the coverages they enjoy, which reduces their quality, which in turn reduces their price—as well as the price of the common stock, if earnings are withheld from it. Thus if the higher cost of money is not recognized by the Federal Power Commission, it must come out of the gas industry security holders as a group. Such inequitable treatment of one group of investors cannot be enforced successfully by regulatory commissions when investors in general are being paid premiums to encourage savings and create capital funds.

And in the case of the interstate gas companies, we are confident the Federal Power Commission will face up to the problem and that compensatory rates of return will be forthcoming to maintain investor confidence and continue the tradition of adequately meeting service.

Reserves

In view of the rapid and continuing expansion of the industry, an adequate supply of gas is vital. So let's look at the gas reserve picture for a moment.

The joint committee on reserves of the American Gas Association and American Petroleum Institute reports that as of December 31, 1958, proved recoverable reserves of the United States were 254 trillion cubic feet. Based on production in that year of about 11½ trillion, the ratio of reserves to production is 22. New

figures, as of Dec. 31, 1959, will be available in a couple of months and no great change is anticipated.

But more important than the ratio is the fact that reserve growth has substantially outdistanced production growth over the years. Since 1950, for example, production has increased about a half-trillion each year on the average. But reserves have *increased* an average of eight trillion per year since 1950; that is, over and above production. So we are definitely keeping ahead. Incidentally, since 1950 the nation's reserves increased 36%, while ours at Tennessee Gas increased nearly twice as fast, or about 63%.

Two other points about reserves: First, we have been talking only about U. S. reserves. In addition, there are substantial volumes of gas in Canada, and to a degree in Mexico in excess of the long-range needs of those countries.

These reserves can cross international boundaries and find markets in this country in the manner in which the proposed pipeline of Midwestern Gas Transmission Company, one of the subsidiaries of Tennessee Gas, will utilize a Canadian gas supply for deliveries to companies and communities in North Dakota, Minnesota and Wisconsin. And Tennessee as has another application on file before the FPC to buy Canadian as at Niagara Falls.

Second, the figures we have been discussing are proved reserves, that is, the reserves that have been found and their extent determined. In addition, we in the industry get considerable comfort from the predictions of experts whose business it is to make long-range studies on what probably will occur in the future, in other words, ultimate reserve figures.

Oil and gas economists for Eastern banks have estimated the total U. S. gas reserves including the 254 trillion of the present and all gas to be discovered in the future, will amount to some 1,200 trillion cubic feet. An American Gas Association

official's projection is some 1,400 trillion, and a U. S. Geological Survey fuels branch chief has gone as high as 1,700 trillion for the ultimate gas reserves of this nation.

In that connection, it is interesting to recall that in 1919 a man who was perhaps the most generally accepetd authority of his day on gas reserves, a Mr. E. W. Shaw, estimated that the total recoverable reserves already known at that time and to be discovered in the future might equal 15 trillion cubic feet. Today the U. S. is producing almost that much every year.

Later estimates have consistently increased. But in each case it was the same story. Every pronouncement has been

shown up as pessimistic in a few years by the technological advances and by the drillers' success in finding more and larger gas pools than anyone dreamed of.

So, I believe the gas reserve situation forms a solid base for the industry expansion of today and for projected future growth.

II—Gas Securities in the Trust Portfolio

Leaving now the general subject of gas in our economy, I would like to talk for a few minutes about what the natural gas industry offers the buyer of securities for trust funds.

Let's go back into not too ancient history a little. During the depression, 25 or 30 years ago, it wasn't easy to get money for natural gas pipelines. Many of you will remember that Toledo Gas Company sold five-year 8 per cent's at 90 to raise money in those days, which shows what the investment banking fraternity thought then of a good gas distributing property.

But even in those tough financial times, the vitality of pipelines was apparent and some of the mgot into business mostly on a limited basis. Starting from the Panhandle and Hugoton fields of Texas, Oklahoma and Kansas, such pipelines as Colorado Interstate, Northern Natural and Panhandle Eastern began to push across the country. El Paso also headed from West Texas toward the smelters of Arizona.

and down on the Gulf Coast the remains of the Moody-Seagraves empire were tied together to form the United Gas Corporation.

Along came the war. But both before and during the war, a lot of things happened that made the job of natural

gas transmission more feasible. Reserves continued to mount in the Southwest as oil men drilling for oil found gas, sometimes a lot of gas with no oil. Inspired by the war, the demand for gas mounted rapidly in the Appalachian area, which was the Ruhr of America, as well as in the East, Northeast, Middle West and Northwest. A great need existed for pipelines.

We built our first Tennessee Gas pipeline and started operating it in 1944, to satisfy the war-generated needs for fuel in the Appalachian area. Next year, the war ended. Men and materials soon became available, and the gas industry took off—whoosh—like one of those rockets we are reading about these days. And it has never stopped.

The establishment of all those pipelines which followed ours out of the Gulf Coast—the great growth of the industry in the 15 years which have followed—were due to several things. Greater financial stability had arrived for the industry. Proration of oil and effective conservation of gas were the order of the day. Banks and investors had greater appreciation of the value of reserves in place, and of long-term contracts with producers at the starting point of the pipeline and with distribution companies at the other end. So we in the industry acquired the ability to bank at reasonable costs. And so we grew. As I said earlier in my remarks, the industry tripled.

In my opinion, the gas industry at present, having emerged from the shadow of the Memphis Decision and making progress in solving some of its regulatory problems, is in a situation comparable to that of the electric utilities after the pressures of the T.V.A. and the Public Utility Holding Company Act were relieved.

2269

When I tell you that in many respects, both the bonds and stocks of gas pipelines and other divisions of the indus-

try have advantages over those of electric utilities, don't be shocked (no pun intended).

Bonds of the gas pipeline companies, for example, typically get a fast payout from approximately a 5% per annum sinking fund. The buyer of such bonds is continually getting a new look at his money. It keeps coming back to him, and he gets new opportunities to invest it on the best terms available.

I need not tell you that in an expanding economy, with a fast-growing population, a mounting Gross National Product, and what sometimes seems to be built-in inflation, that is a real advantage.

Let's take a concrete case. In 1951, Tennessee Gas sold $35 million of 3⅛% series first mortgage bonds due 1971. As of December 31, 1959, after eight years, we have retired $12¼ million of those bonds, or about 40%.

If a trust officer had bought those bonds, back eight years ago, he would have roughly 40% of his capital back by now in reinvestable form. Last July, he could have reinvested any of his returned capital in a new bond issue of our company and could have bought a 5¼% interest return for his money. Pipeline bond retirements create a sort of rolling effect on the investor's capital which is not typical of electric utility bonds.

By way of contrast, let's look at the situation of an investor who bought 3⅛% electric utility bonds back eight years ago. Either he has to hold them to full maturity—30 or 35 years usually—at the low interest rate, or sell them at a discount, thereby losing part of his original investment, in order to be able to reinvest the remainder on the more advantageous terms now current.

Debt securities at Tennessee Gas, for example, are sold typically with about a 12 or 12½-year average life. Which

of course means that if a trustee invests in such an issue, under normal operation of sinking funds he will get his money back

2270

at a rate equivalent to getting it back in 12 or 12⅛ years, instead of the 30 or 35 years for the electric utilities. We also have sold our senior preferred stock with a sinking fund. And sinking funds on electric preferred stock are extremely rare.

Gas pipeline companies started on a completely different investment premise from electric utilities. An electric company mortgage typically allows substitution of properties for sinking funds. The effect of the mortgage is for more and more property to be put into the trust estate against which the company can't issue new bonds.

On the other hand, in a gas transmission company the expenditure for plant is basically treated as a one-time investment. This originated partly from the fear of depletion of reserves which might lead to a stoppage of gas service some day.

Property has been made to earn its own retirement and earn it on a short-life basis. But as I have previously pointed out, our nation's gas reserves—given the economic incentive of price and located by the talent and skill of our exploration teams—have grown at a rate exceeding the use of gas. And this fear of exhaustion is a ghost which should no longer haunt the security buyer.

With this in mind, perhaps the following homely illustration—really homely, since it is based on the figurative "homes" of two men we will call Mr. Gas Pipeline and Mr. Electric—will make my point clearer.

Mr. Electric builds his home. He keeps adding rooms. He doesn't pay off any of his bonds. The mortgage holder

is satisfied, however, for he keeps getting more house as security for his mortgage, even though the house is getting older.

Mr. Gas Pipeline basically just builds his home, and adds no rooms. He makes regular annual payments on his mortgage. The size of the remaining debt decreases. The property depreciates. But the position of the debtholder is good—he gets paid off faster than the house depreciates. And, to repeat, he has money for reinvestment.

2271

His good position results from, among other things, the spread that develops between the net depreciated value of the pipeline property, on the one hand, and the amount of the bonds on the other. That spread is at least as great, and perhaps greater, in the gas transmission business than in the electric utility business.

Under the pressure of low rates of return adhered to by the Federal Power Commission, pipelines have initially been financed at high rates of indebtedness exceeding in many cases 70% of plant. New bonds, under mortgages generally accepted, cannot initially exceed 60% of plant additions which builds in a good margin of safety as the systems grow. In addition, as this margin grows and as pipeline bonds are retired rapidly, the ratio of mortgage bonds to net gas transmission plant continues to drop. For example, in 1954 the ratio of mortgage bonds to net transmission plant at Tennessee Gas had declined to 58%. And five years later, at the end of 1959, it had dropped still further to 53%. In other words, the ratio improves even after offsetting the original cost by appropriate depreciation charges. I am convinced you are as well off in the pipeline bond business as in the electric utility business.

To keep the record straight, I am sure you all share with me the high regard for the electric utility business which it enjoys with investors generally. Its securities have earned this standing by steady long-term performance. But through my close personal dealings with pipeline securities which have amounted to between $1 billion and $1½ billion through the last 15 years, I have become convinced that the gas industry's securities—in the words of the current breakfast food commercial—are "just a little bit better." Better, in that they give the buyer better sinking fund protection, better ability to follow trends in interest and money markets with what I am convinced is every bit of the security that inures to an investment in an electric utility.

And now let's examine gas industry equity securities for a few moments.

It has not been advertised, nor is it generally known, that equity ratios in gas companies have been increasing steadily, as a corollary to the initial financing which starts with a large debt and rapidly works itself into an equity position. This

build-up of equity values not only provides ever-growing protection to the debt holder, but also gives great investment satbility, coupled with its inherent outstanding growth incentive, to the equity holder himself.

For example, Tennessee had at the end of 1954 only 19% of its capitalization in common stock and surplus. While five years later, at the end of 1959, including convertible second preferred stock our equity had risen to over 31%. As you know, we are going to market with additional equity securities this month and it is our intention ot further strengthen our equity position to over 35% by the end of 1960.

Many gas companies have followed the trend which I have just mentioned as illustrative of the stability which the industry is building into its securities as the industry approaches maturity. Certainly the great growth in gas reserves which are being developed in the producing areas of the country; the widespread ownership of these reserves by the gas companies themselves, and a continued growth on a basis approaching 8% compounded annually, removes the fear of declining rate base as a reducer of earnings.

Further, the yields which are available on gas company stocks exceed those of electric utilities with the same growth characteristics—on a performance basis—they most closely parallel. And when markets generally become confused over the position of the highly volatile growth stocks, there is no better defense than to look to these equities in the gas business. They are able to show sustained, continued growth, rapidly improving equity ratios, and sound and increasing gas reserve positions supported both by matured contracts and by actual ownership.

Certainly in the light of the known reserve picture there is little justification in the gas business for the investment standing of the distributing companies, which cannot increase or even continue their earnings unless they are supported by the pipelines, and the lower appraisal of pipelines themselves. The pipeline firms should

enjoy a perferred position with investors over the distributing companies they serve and who serve the ultimate consumer.

In any discussion of pipeline equity securities, the first preferred stocks should not be overlooked. As you know, by fashion they carry a sinking fund and a consistently higher dividend rate, so that in those markets where return

is required by the character of the account or the needs of the beneficiary, they are desirable. These stocks, too, are being greatly upgraded by the improving equity relationships and the reduction of prior debt.

During the growth and development of pipeline companies such as Tennessee Gas over the last 15 years, it is interesting to note the acceptance by the investing public of the same range of securities sold or used by other utilities. They include first mortgage bonds, debentures, preferred stock (with sinking fund), convertible preferred stock (which has not usually been used by such utilities), and finally, common sotck itself.

While you will be sure I am prejudiced, I know of no better industry that has a combination of (one), compounded growth and, (two), approaching maturity that the gas industry is now enjoying. It remains only for us to achieve stability in a government philosophy, which any industry the size of the gas industry is bound to obtain. And when we obtain it, in my opinion, our securities will be fully as well regarded as those of other utility companies.

Certainly many factors, such as the low labor content of our business, would entitle them to be even more seriously considered in these times of high labor costs.

Conclusion

In conclusion, I have mentioned *growth* more than once in this discussion. And now I want to close on that note.

The growth factor is an important one for the investor. In the past 15 years, the industry has had it to probably a greater degree than any other major industry.

That is why it has grown to a position as the fifth largest industry in the nation in terms of plant investment.

And that growth is still continuing. The industry firmly believes it will double in the next 10 years. It spent $1.8 billion in 1959 for expansion. In 1960 it will spend $1.9 billion or a $100 million additional.

The industry is dynamic. We in it are not discouraged by problems, and refuse to lie down and play dead when new challenges arise. The inherent stability of the natural gas business is linked with an equally inherent growth incentive based on public preference and demand.

Gas has fought its way upward to a well-deserved position of prominence in the nation's fuel economy. Further progress will be no soft snap, but then neither was that of the past. I look for continued sound healthy growth—growth both actual and relative, and meaningful for the investor and for the economy, in an exciting decade ahead.

Thank you.

largest

7 firmly
nt $1.8
nd $1.9

uraged
d when
natural
growth

d posi-
urther
as that
owth—
or the
ahead.

EXHIBIT 2275

Value Line Survey
© Arnold Bernhard & Co., Inc.

TENNESSEE GAS TRANSM. (NYSE-TGT) MARCH 21, 1960 867

Relative timeliness in Pt. | Past Growth 100 Past Stability 85 Intervals of 5 (100—5) | Quality Grade A | Price/Earnings Ratio (10 Year Av'ge 15.5) 15.1 | Dividend Yield (10 Year Av'ge 4.7%) 4.7%

	Index	Your Weights	Efficiency
Quality (safety)	10	×	=
Performance (next 12 months)	10	×	=
Potentiality (3 to 5 years)	6	×	=
Yield (income)	6	×	=
Sum (efficiency for your portfolio)			=

Based on earns. (2.25) and divs. (1.59) est. in 12 mos. ending 3/31/61.

(Highest)

33 1/3% stock — 25% stock — 25% stock — 20% stock — 33 1/3% stock — 20% stock

RANK according to Probable Market Performance

	I Highest	II Above Average	III Average	IV Below Average	V Lowest
Next 12 months ①	✓				
To 1963-65			✓		

① Determined by the ratio of Average Price to Intrinsic Value

Next Dividend Meeting: about Apr. 15
Next Div'd Goes Ex: about May 11

	1929	1932	1937	1938	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Gross Revenues ▶					18.4	20.4	28.4	41.2	53.3	75.8	108.4	133.3	143.0	200.4	267.8	313.2	402.8	463.1	490	
Net Plant ▶					78.2	111.6	163.2	211.4	325.4	462.7	531.8	563.4	667.2	795.4	909.3	986.0	1093.8	1156.5		
Return on Plant ▶					6.1%	5.5%	5.0%	5.3%	5.0%	4.4%	5.5%	5.6%	5.1%	5.7%	5.7%	6.1%	6.3%	7.4%		
Debt Ratio ▶					60.9%	66.1%	65.2%	64.9%	63.9%	69.4%	68.9%	68.1%	67.5%	66.9%	64.9%	66.0%	62.0%	60.9%		
Book Value/sh. ▶					2.64	3.07	3.94	4.87	5.79	6.29	6.94	7.87	8.23	9.47	10.00	10.74	12.16	14.17		
Earnings per sh. ▶					.42	.60	.59	.69	.91	.87	1.16	1.03	1.18	1.47	1.61	1.62④	1.72④	1.93	2.20	
Div'ds per sh. ▶					--	.09	.38	.50	.62	.73	.80	.88	.88	.96	1.17	1.17③	1.34③	1.60③	1.53	
Div'd Payout ▶					6.9%	18.4%	49.3%	48.8%	52.7%	55.9%	45.2%	48.0%	48.8%	39.6%	43.1%	38.3%	37.6%	39.9%	36%	
Avg. Price/Earns ▶					11.5	8.1	11.9	13.8	13.2	15.0	13.4	14.4	13.8	16.6	15.4	15.1	17.2	17.4		
Avg. Div'd Yield ▶					--	1.9%	4.9%	4.9%	4.9%	5.0%	5.0%	5.9%	5.4%	3.9%	4.7%	4.4%	4.5%	4.3%		

CAPITAL STRUCTURE

Debt $744.7 mill. Interest $30.5 mill.

Pfd Stock $184.5 mill. Dividend $8.6 mill. 801,065 shs., 9 series 4.10%-5.25%; 209,279 shs. 4.56% conv. into 3.45 com. shs to 3-1-66; 440,000 shs. 4.72% conv. into 2.4 com. shs. to 4-1-69; 295,178 shs. 5% conv. into 2.67 com. shs. to 11-1-64, fewer thereafter. (All cumulative, all $100 par.)

Common Stock 23,259,978 shares

Calendar Year	GROSS REVENUES ($ Millions) for Quarters Ended Mar. 31	June 30	Sept. 30	Dec. 31	Full Year
1957	75.3	71.1	78.9	87.9	313.2
1958	110.9	91.1	94.1	106.7	402.8
1959	117.0	99.6	107.6	NA	463.1⑤
1960			Estimates in Notes		550

Calendar Year	EARNINGS (Per Share) for Quarters Ended Mar. 31	June 30	Sept. 30	Dec. 31	Full Year
1957	.27	.38	.28	.35	1.16
1958	.36	.38	.39	.39	1.53
1959	.42	.43	.45	.42	1.72④
1960	.47	.48	.48	NA	1.93

Average Price past 52 weeks 33 | Recent Price 34 | Intrinsic Value next 12 months 39 | Potential Value during 1963-65 45 (+32%)

Advice: Tennessee continues to represent a sound, defensive holding in a generally overvalued and uncertain stock market. The stock's high Quality Grade (A) and Stability Index (85) testify to its resistance to declines in the general market. Further, the issue ranks in Group I (Highest) for Probable Market Performance in the Next 12 Months. The estimated dividend yield of 4.7% over the next 12 months compared favorably with that afforded by all stocks on average. True, the shares' Appreciation Potentiality to 1963-65 is only moderate, but it can be considered well assured.

Current Analysis: In a manner typical of Tennessee's Chrmn. Symonds, the company took a series of rapid-fire and related actions early this year. In quick succession, directors proposed a 50% stock dividend and an increase in the cash dividend rate, reported record 1959 earnings, and - before the resultant excitement had settled - floated the new $1.65 annual dividend rate (on present shares) will probably force even more rapid conversion of the 4.50% preferred. By year end, nearly 30% of TGT's capital structure will be represented by common stock, the highest proportion in the company's history. It would appear, therefore, that the bulk of the company's financial requirements for the next year or two will require sale of only senior securities.

The additional stock will dilute share earnings somewhat, but not enough - we believe - to prevent a sharp further rise (to about $2.30) this year. It should be pointed out that more than $1.30 a share of these earnings represent revenues being collected subject to refund. However, the action of Tennessee's directors in increasing the dividend well above the level of presently "firm" earnings reflects their confidence that the bulk of pending rate increases will be approved.

Heard

TENNESSEE GAS TRANSM. (NYSE-TGT)

EXHIBIT 2275

MARCH 21, 1960

cumulative, all $100 par.)
Common Stock 23,259,978 shares

Calendar Year	REVENUES ($ Millions) for Quarters Ended Mar. 31	June 30	Sept. 30	Dec. 31	Full Year
1952	24.7	24.6	25.9	31.2	106.4
1953	31.5	33.4	32.0	36.4	133.3
1954	36.1	34.0	32.7	41.2	143.0
1955	44.1	41.2	53.3	61.8	200.4
1956	66.5	64.7	66.5	70.9	267.6
1957	75.3	71.1	76.9	87.9	313.2
1958	110.9	91.1	94.1	108.7	4[illegible]
1959	117.0	90.6	107.6	NA	483.1(3)
1960			Estimates in Prices		550

Calendar Year	EARNINGS (Per Share) for Quarters Ended Mar. 31	June 30	Sept. 30	Dec. 31	Full Year
1952	.27	.26	.26	.35	1.16
1953	.26	.26	.23	.28	1.03
1954	.22	.35	.26	.35	1.18
1955	.35	.35	.32	.47	1.47
1956	.36	.37	.38	.48	1.61
1957	.33	.30	.36(4)	.64	1.62(4)
1958	.40(4)	.29	.35	.68	1.72(4)
1959	.38	.42	.38	NA	1.93(5)
1960			Estimates in Prices		2.20

Calendar Year	DIVIDENDS PAID(1) in the three months ended Mar. 31	June 30	Sept. 30	Dec. 31	Twelve months Total
1952	.183	.183	.183	.219	.77
1953	.219	.219	.219	.219	.88
1954	.219	.219	.219	.219	.88
1955	.219	.219	.219	.219	.88
1956	.292	.292	.292	.292	1.17
1957	.292	.584(3)	.292	.292	1.46
1958	.292	.35	.35	.35	1.34
1959	.35	.35	.35	.35	1.40
1960	.35				

in the general market. Further, the issue ranks in Group I (Highest) for Probable Market Performance in the Next 12 Months. The estimated dividend yield of 4.7% over the next 12 months compared favorably with that afforded by all stocks on average. True, the shares' Appreciation Potentiality to 1963-65 is only moderate, but it can be considered well assured.

Current Analysis: In a manner typical of Tennessee's Chrmn. Symonds, the company took a series of rapid-fire and related actions early this year. In quick succession, directors proposed a 50% stock dividend and an increase in the cash dividend rate, reported record 1959 earnings, and - before the resultant excitement had settled - floated a highly successful 1.6 million share issue of new common stock. (Also typically, Mr. Symonds got the maximum mileage from the proposed dividend increase, since it will not be effective until the September payment.) In successfully raising some $53 million in new equity capital at a time when the stock market generally was well below its December high and looked weaker all the time, the company pulled quite a coup. Moreover, the highest proportion in the company's history. It would appear, therefore, that the bulk of the company's financial requirements for the next year or two will require sale of only senior securities.

The additional stock will dilute share earnings somewhat, but not enough - we believe - to prevent a sharp further rise (to about $2.20) this year. It should be pointed out that more than $1.30 a share of these earnings represent revenues being collected subject to refund. However, the action of Tennessee's directors in increasing the dividend well above the level of presently "firm" earnings reflects their confidence that the bulk of pending rate increases will be approved.

3 to 5 Year Projections: In the hypothesized 1963-65 economy (see page 8 of the Summary-Index), we project average annual revenues to $800 million, earnings to $3 a share and dividends to $2.10. Capitalized at 4.8%, consistent with past norms adjusted for trend, such results would command a price of 45 (15.5 times earnings). F.B.S.

BUSINESS: Tennessee Gas Transmission Company operates a natural gas pipe line system extending from Texas and Louisiana to New England. Also produces natural gas, crude oil, refined petroleum and extracted hydrocarbon products. Major customers: Columbia Gas System, Consolidated Natural Gas Co. Principal affiliates; Mid-Western Gas Transmission Co., Bay Petroleum Corp., Petro-Tex Chemical Corp. Since 1941-49, operating revenues have increased fifteen-fold (gas industry 300%). Has 5,500 employees, 97,500 stockholders. President, Gardiner Symonds. Inc.: Del. Address: Commerce Bldg., P. O. Box 2511, Houston, Texas.

① -Dividend payment dates: Mar. 10, June 14, Sept. 10, Dec. 14.
② -Dividends declared.
③ -Two quarterly payments.
④ -Excludes 14¢ a share in 1957, 12¢ in 1958, non-recurrent profit.
⑤ -Estimated 55% in '57, 17% in '58, 50% in 1959, considered a return of capital for tax purposes.
⑥ -Full year includes East Texas Natural; interim figures not comparable.

Above per share figures and price range adjusted for stock distributions shown on face of chart.

Log Intrinsic Value Next 12 Mos.: .630 log (.86 x Earn. + 1.60 x Div.) + 1.239

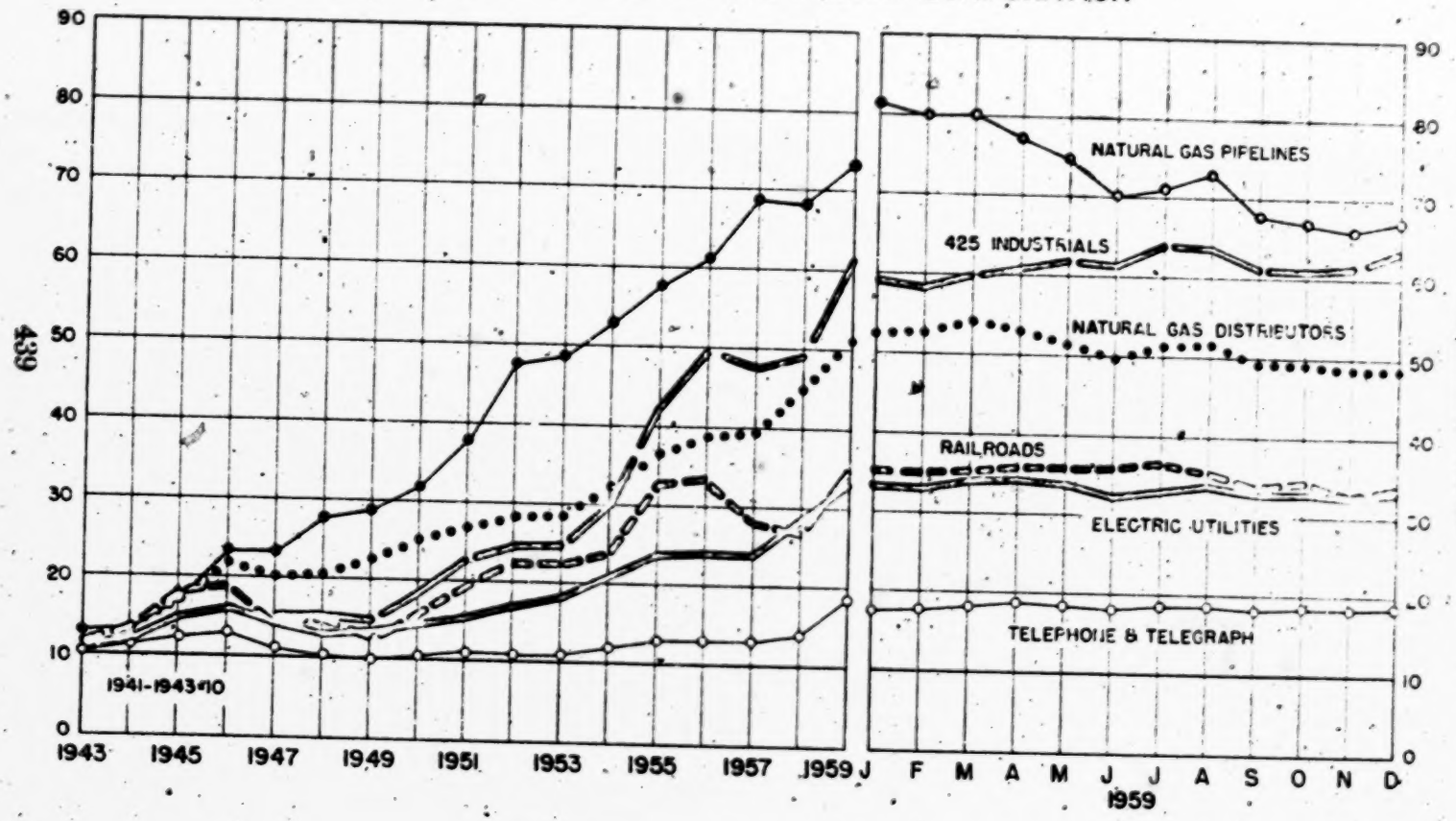
(3) Percentage of Outstanding Shares Traded Monthly.

Arnold Bernhard & Co., Inc., and/or its directors or officers, and/or its affiliates, have in the aggregate an investment exceeding 1% of the equity [illegible]

Hearing Exhibit No. 19 (2275)

SELECTED COMMON STOCK PRICE INDEXES, 1943-1959
COMPUTED BY STANDARD & POOR'S CORPORATION

EXHIBIT NO.
DOCKET NO. G-1976[illegible]
WITNESS P. SHAFFER



Hearing Exhibit No. 20

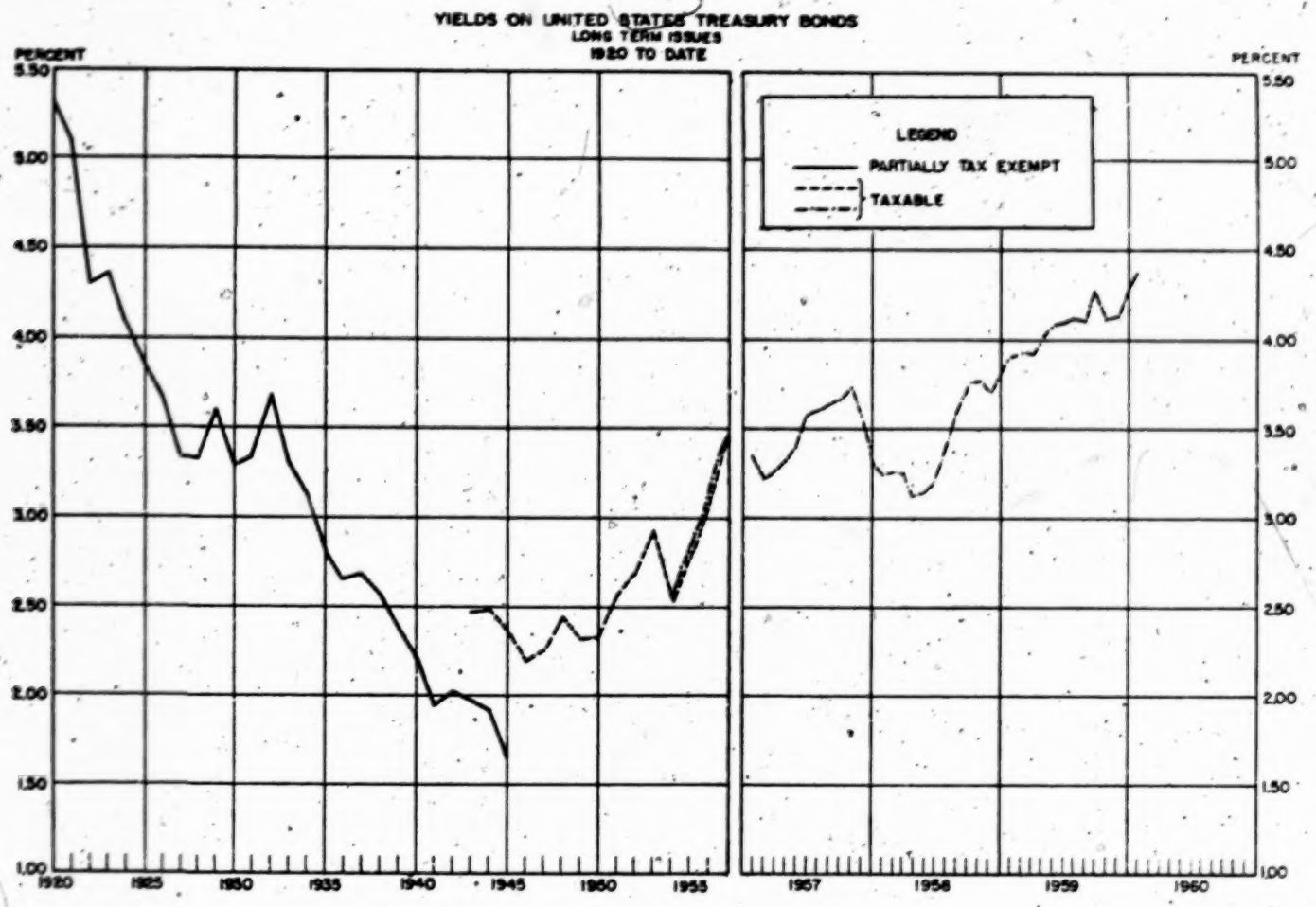
(2276)

SELECTED COMMON STOCK PRICE INDEXES, 1943 - 1959

COMPUTED BY STANDARD & POOR'S CORPORATION 1941-43 = 10

	6 Natural Gas Pipelines	425 Industrials	11 Natural Gas Distributors	25 Railroads	30 Electric Utilities	3 Telephone and Telegraph
1943	13.16	11.49	11.91	11.81	11.13	10.57
1944	12.90	12.34	13.06	13.47	12.19	11.40
1945	17.37	14.72	16.95	18.21	14.94	12.45
1946	23.56	16.48	21.93	19.09	16.32	13.18
1947	23.51	14.85	20.37	14.02	14.27	11.21
1948	27.64	15.34	20.65	15.27	12.96	10.54
1949	28.92	15.00	22.57	12.83	13.47	10.04
1950	31.97	18.33	25.01	15.53	14.72	10.67
1951	37.83	22.68	26.88	19.91	15.42	11.02
1952	47.62	24.78	28.49	22.49	17.10	11.02
53	48.51	24.84	28.59	22.60	18.15	11.17
54	53.00	30.25	32.41	23.96	21.01	12.08
1955	57.85	42.40	36.63	32.94	23.77	13.14
1956	61.23	49.80	38.81	33.65	24.03	13.14
1957	68.69	47.63	39.55	28.11	23.98	13.15
1958	68.20	49.36	45.03	27.05	28.56	14.05
1959	73.11	61.45	51.12	35.09	33.30	18.43
59						
Jan.	81.52	59.30	52.55	35.53	33.34	17.64
Feb.	79.94	58.33	52.87	35.20	33.04	17.96
Mar.	80.29	59.79	54.28	35.47	34.15	18.49
Apr.	77.48	60.92	53.12	35.94	34.24	19.03
May	74.87	62.09	51.67	36.07	33.80	18.66
June	70.27	61.25	49.81	36.02	32.26	18.29
July	71.29	64.23	51.47	36.86	33.18	18.75
Aug.	73.18	63.74	51.79	35.56	33.87	18.68
Sept.	67.99	61.21	49.31	33.78	32.91	18.23
Oct.	67.01	61.04	49.30	34.32	33.06	18.56
Nov.	66.18	61.46	48.71	32.80	32.68	18.46
Dec.	67.26	63.56	48.60	33.57	33.11	18.41
Avg.	73.11	61.45	51.12	35.09	33.30	18.43

Source: Standard & Poor's Trade & Securities Statistics.



Hearing Exhibit No. 21

(2280)

141

YIELD ON UNITED STATES TREASURY BONDS

PARTIALLY TAX EXEMPT

Year	Avg.	Year	Avg.	Year	Avg.	Year	Avg.	Year	Avg.
1920	5.32%	1925	3.86%	1930	3.29%	1935	2.79%	1940	2.21%
1921	5.09	1926	3.68	1931	3.34	1936	2.65	1941	1.95
1922	4.30	1927	3.34	1932	3.68	1937	2.68	1942	2.02
1923	4.36	1928	3.33	1933	3.31	1938	2.56	1943	1.98
1924	4.06	1929	3.60	1934	3.12	1939	2.36	1944	1.92
								1945	1.66

The yields for the period January 1920 to October 1925, are averages of yields of all outstanding partially tax exempt Government bonds due or callable after eight years. Those yields from October, 1925, to February, 1943, are based on bonds due or callable after twelve years. Averages for the two sets of bonds were identical from October, 1925 to July, 1928. In April, 1944, the series was revised beginning February, 1943, to include all outstanding partially tax exempt issues due or callable in more than 15 years. The series were discontinued after December, 1945, since subsequent to this date there were no bonds outstanding with a maturity date of over 15 years.

TAXABLE

Year	Avg.	Year	Avg.	Year	Avg.	Year	Avg.	Year	Avg.
1943	2.47%	1946	2.19%	1949	2.31%	1952	2.68%	1955	2.80%
1944	2.48	1947	2.25	1950	2.32	1953	2.93	1956	3.05
1945	2.37	1948	2.44	1951	2.57	1954	2.53	1957	3.47

The series was started in October, 1941, with average yields on taxable bonds due or callable in 12 years. Commencing with February, 1943, the series was changed to taxable bonds due or callable in 15 years. Due to the short period during which the first series were employed, that period November, 1941 to February, 1943, is eliminated in order that the data will consist of the same series. Beginning April 1, 1952, series includes all fully taxable, marketable bonds due or first callable after 12 years, through September 30, 1955, and those due or callable in 10-20 years, beginning October 1, 1955. Each new bond with a period to call or to maturity of more than the minimum was included upon date of issue and dropped when its period to call or to maturity reached the minimum. The yields are figured to call date when the issue was selling above par and to maturity date when the issue was selling below par. Monthly data are average of daily figures.

NEW SERIES

Year	Avg.	Year	Avg.	Year	Avg.
1954	2.55%	1956	3.08%	1958	3.43%
1955	2.84	1957	3.47	1959	4.07%

Month	1957	1958	1959	1960
January	3.36%	3.24%	3.90%	4.37%
February	3.22	3.26	3.92	
March	3.26	3.25	3.92	
April	3.32	3.12	4.01	
May	3.40	3.14	4.08	
June	3.58	3.19	4.09	
July	3.60	3.36	4.11	
August	3.63	3.60	4.10	
September	3.66	3.75	4.26	
October	3.73	3.96	4.11	
November	3.57	3.70	4.12	
December	3.30	3.80	4.27	
Average	3.47%	3.43%	4.07%	

This series is based on bonds maturing or callable in ten years or more. First appeared in the Federal Reserve Bulletin, January, 1958.

Source: Years 1920 to 1941 - "Banking and Monetary Statistics, (November, 1943)", pages 468-474, published by the Federal Reserve System.

Years 1942 to date "Federal Reserve Bulletin".

COMPILATION OF MOODY'S BOND YIELD AVERAGES

In the compilation of Moody's Bond Yield Averages, daily yields for each individual bond are computed on the basis of closing prices. Unweighted arithmetic averages are computed to obtain each of the series shown. The monthly series are arithmetic averages of the daily figures.

Occasional substitutions in the bond list have been made when ratings have been changed, when a bond is called, when a bond sells too far above its call price, or because of approaching maturity. Suitable adjustments (usually small), which are gradually amortized, are introduced to prevent such substitutions from impairing the comparability of the series. No convertible or other unusual issues are included and the average maturity is close to 30 years.

Only 60 bonds were used in the averages from 1920 to 1927, inclusive. From 1928 to 1933, inclusive, 120 bonds were used, no adjustment being required to connect the two series. Since 1933 it has not been possible to find a sufficient number of representative bonds for some of the Industrial and Railroad groups, and, therefore, contain a less number from time to time. However, the averages for these groups are given equal weighting in combining them with other group averages.

KEY TO MOODY'S BOND RATINGS

Moody's Ratings are an indicator of the relative investment quality of bonds. The Ratings are defined by Moody's Investors Service as follows:

Aaa

Bonds which are rated Aaa are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilt edge." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

Aa

Bonds which are rated Aa are judged to be of high quality by all standards. Together with the Aaa group they comprise what are generally known as high grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in Aaa securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present which make the long term risks appear somewhat larger than in Aaa securities.

A

Bonds which are rated A possess many favorable investment attributes and are to be considered as higher medium grade obligations. Factors giving security to principal and interest are considered adequate but elements may be present which suggest a susceptibility to impairment sometime in the future.

Baa

Bonds which are rated Baa are considered as lower medium grade obligations, i.e., they are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

Source: Moody's Bond Yield Averages are computed by Moody's Investors Service and are issued in their publications. The Bond Yield Averages are reproduced in Survey of Current Business, November 1937, 1938 Supplement, and March, 1939. The above figures were taken from the last named source for the period from January 1920, to January, 1939; and were taken directly from Moody's Bond Survey for the subsequent months. Definitions of Ratings were taken from Moody's Public Utilities, 1936 page vi.

MOODY'S BOND YIELD AVERAGES - ACCORDING TO INDUSTRY - 1920 TO DATE

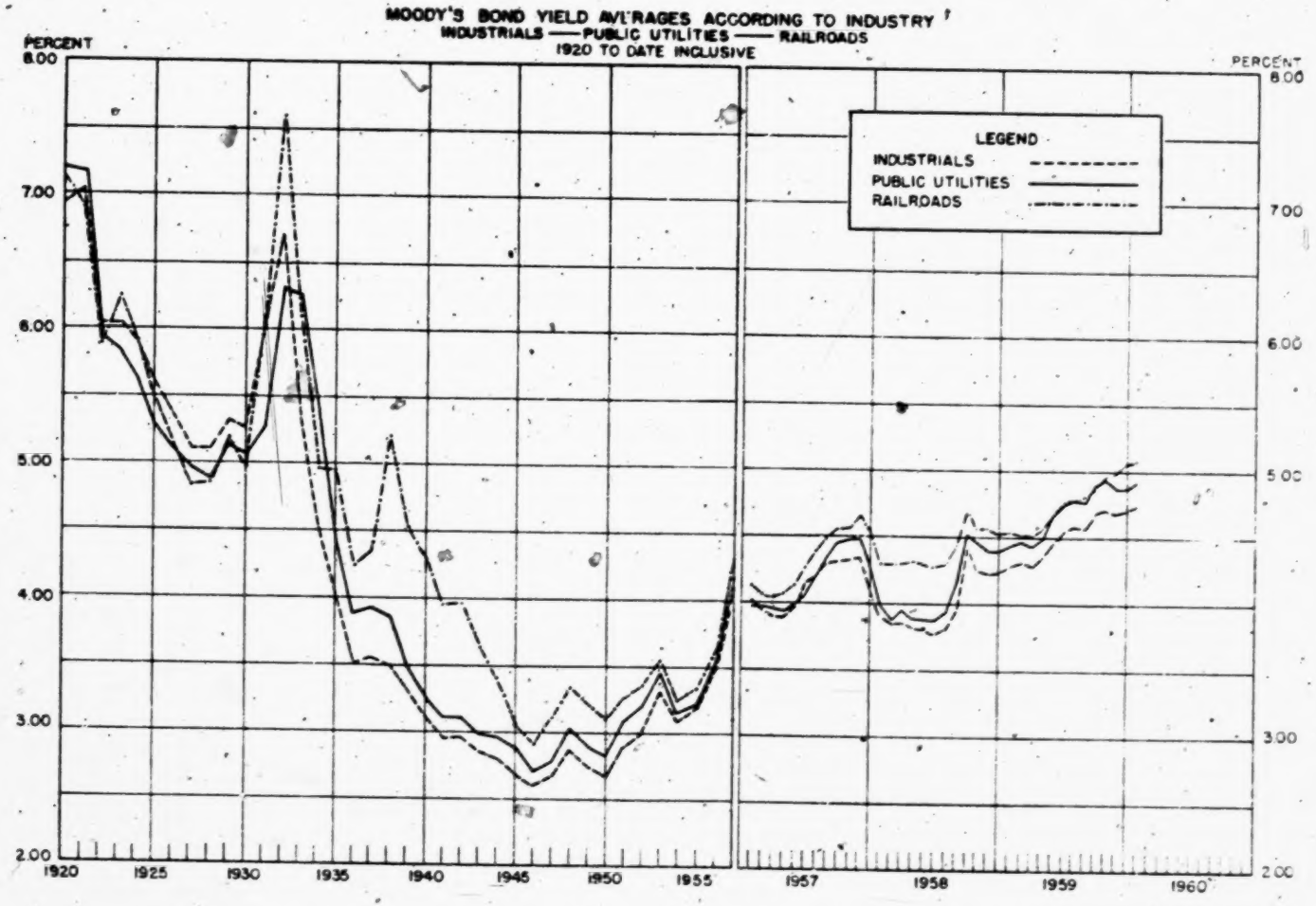
YEARLY AVERAGES

Year	Industrials	Railroads	Utilities
1920	6.94%	7.12%	7.19%
1921	7.04	6.91	7.17
1922	6.04	5.89	5.93
1923	6.04	6.24	5.94
1924	5.90	5.90	5.61
1925	5.61	5.51	5.29
1926	5.37	5.13	5.11
1927	5.10	4.83	4.96
1928	5.10	4.85	4.87
1929	5.31	5.18	5.14
1930	5.25	4.96	5.05
1931	6.08	6.09	5.27
1932	6.71	7.60	6.30
1933	5.34	6.09	6.25
1934	4.52	4.96	5.40
1935	4.02	4.95	4.43
1936	3.50	4.24	3.88
1937	3.55	4.35	3.93
1938	3.50	5.21	3.87
1939	3.30	4.53	3.48
1940	3.10	4.30	3.25
1941	2.95	3.95	3.11
1942	2.96	3.96	3.11
1943	2.85	3.64	2.99
1944	2.80	3.39	2.97
1945	2.68	3.06	2.89
1946	2.60	2.91	2.71
1947	2.67	3.11	2.78
1948	2.87	3.34	3.03
1949	2.76	3.24	2.90
1950	2.67	3.10	2.82
1951	2.89	3.26	3.09
1952	3.00	3.36	3.20
1953	3.30	3.55	3.45
1954	3.09	3.25	3.15
1955	3.19	3.34	3.22
1956	3.50	3.65	3.54
1957	4.12	4.32	4.18
1958	3.98	4.39	4.10
1959	4.51	4.75	4.70

MONTHLY AVERAGES

Year	Industrials	Railroads	Utilities
1957			
Jan.	4.02%	4.12%	3.98%
Feb.	3.94	4.06	3.97
Mar.	3.90	4.04	3.95
Apr.	3.89	4.06	3.94
May.	3.96	4.13	3.98
June	4.14	4.26	4.06
July	4.19	4.39	4.19
Aug.	4.29	4.49	4.33
Sept.	4.31	4.56	4.45
Oct.	4.32	4.57	4.48
Nov.	4.34	4.65	4.49
Dec.	4.11	4.53	4.29
Ave.	4.12%	4.32%	4.18%
1958			
Jan.	3.91%	4.30%	3.99%
Feb.	3.86	4.29	3.87
Mar.	3.86	4.30	3.95
Apr.	3.83	4.32	3.90
May	3.80	4.30	3.89
June	3.77	4.28	3.88
July	3.81	4.30	3.91
Aug.	3.94	4.42	4.16
Sept.	4.24	4.52	4.41
Oct.	4.25	4.56	4.46
Nov.	4.23	4.56	4.40
Dec.	4.24	4.52	4.39
Ave.	3.98%	4.39%	4.10%
1959			
Jan.	4.28%	4.53%	4.43%
Feb.	4.31	4.51	4.46
Mar.	4.28	4.52	4.43
Apr.	4.35	4.56	4.49
May	4.46	4.67	4.67
June	4.55	4.76	4.77
July	4.58	4.79	4.79
Aug.	4.56	4.80	4.77
Sept.	4.68	4.88	4.89
Oct.	4.70	4.96	4.95
Nov.	4.69	4.99	4.86
Dec.	4.70	5.05	4.86
Ave.	4.51%	4.79%	4.70%
1960			
Jan.	4.74%	5.08%	4.92%
Feb.	4.71	5.05	4.89

For identities of issues compising these averages see page 8.


MOODY'S BOND YIELD AVERAGES ACCORDING TO INDUSTRY
INDUSTRIALS — PUBLIC UTILITIES — RAILROADS
1920 TO DATE INCLUSIVE
PERCENT
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1920
1925
1930
1935
1940
1945
1950
1955
1957
1958
1959
1960
LEGEND
INDUSTRIALS
PUBLIC UTILITIES
RAILROADS

6

MOODY'S BOND YIELD AVERAGES OF 40 PUBLIC UTILITIES - - ACCORDING TO RATINGS - - 1920 TO DATE

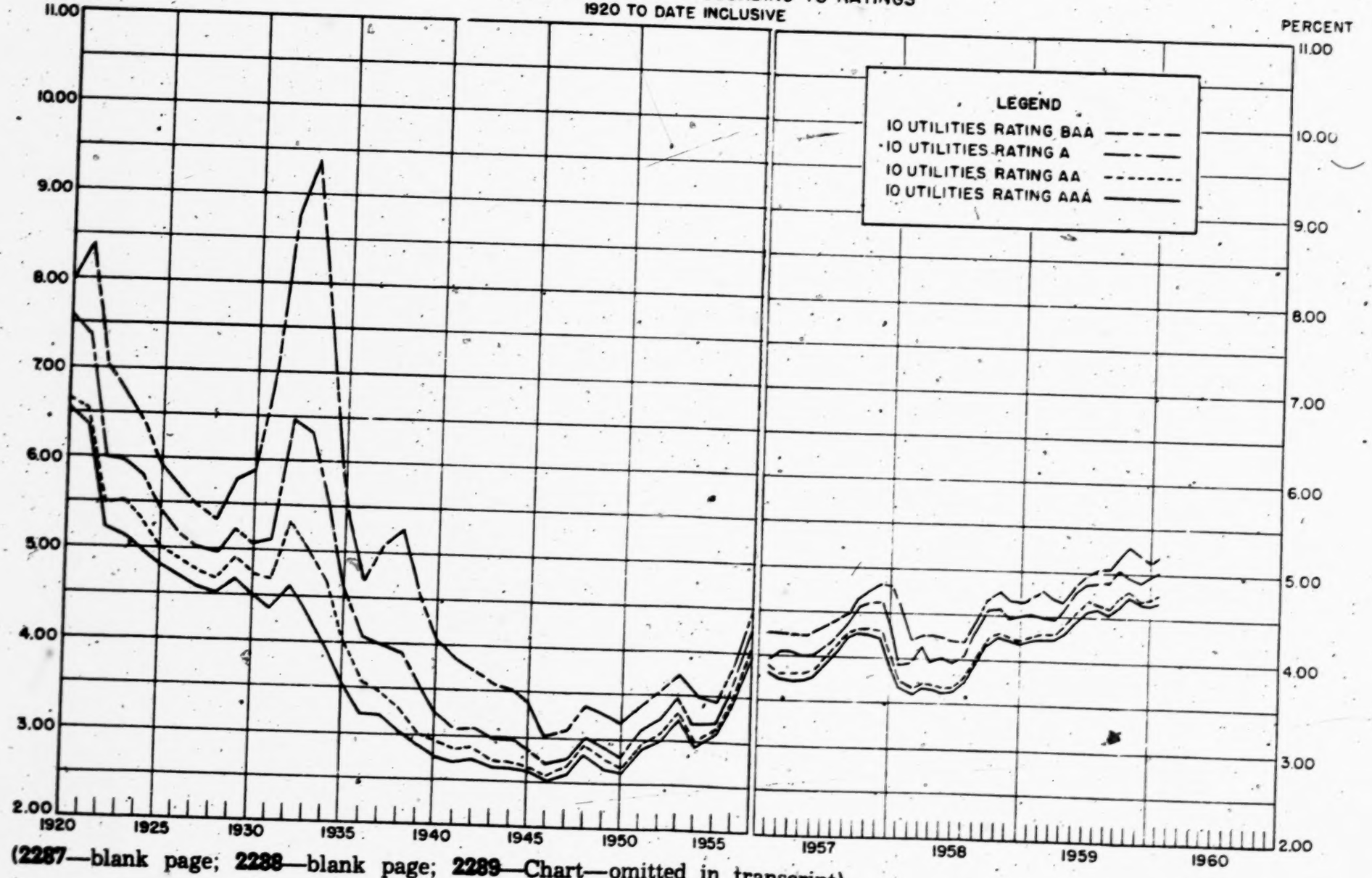
YEARLY AVERAGES

Year	10 Aaa Bonds	10 Aa Bonds	10 A Bonds	10 Baa Bonds
1920	6.53%	6.65%	7.57%	7.99%
1921	6.34	6.55	7.38	8.40
1922	5.23	5.48	6.00	7.03
1923	5.14	5.51	5.97	6.75
1924	4.96	5.30	5.80	6.38
1925	4.82	5.03	5.42	5.91
1926	4.70	4.88	5.17	5.67
1927	4.59	4.76	5.02	5.46
1928	4.51	4.68	4.95	5.33
1929	4.67	4.91	5.22	5.76
1930	4.50	4.75	5.06	5.88
1931	4.36	4.68	5.12	6.90
1932	4.61	5.32	6.46	8.78
1933	4.29	5.02	6.32	9.38
1934	3.92	4.66	5.55	7.49
1935	3.52	4.02	4.61	5.56
1936	3.21	3.57	4.08	4.67
1937	3.21	3.45	3.98	5.09
1938	3.03	3.28	3.90	5.26
1939	2.88	3.03	3.52	4.50
1940	2.77	2.92	3.24	4.05
1941	2.69	2.83	3.07	3.84
1942	2.73	2.87	3.09	3.73
1943	2.65	2.73	2.99	3.58
1944	2.65	2.72	2.97	3.52
1945	2.62	2.67	2.87	3.39
1946	2.51	2.58	2.71	3.03
1947	2.59	2.67	2.78	3.08
1948	2.81	2.92	3.02	3.36
1949	2.67	2.76	2.90	3.28
1950	2.62	2.68	2.79	3.18
1951	2.88	2.95	3.11	3.39
1952	2.99	3.05	3.24	3.53
1953	3.24	3.32	3.49	3.73
1954	2.93	3.00	3.16	3.51
1955	3.09	3.13	3.22	3.43
1956	3.39	3.43	3.56	3.78
1957	3.96	4.03	4.24	4.46
1958	3.87	3.92	4.20	4.43
1959	4.49	4.56	4.78	4.96

MONTHLY AVERAGES

Year	10 Aaa Bonds	10 Aa Bonds	10 A Bonds	10 Baa Bonds
1958				
Jan.	3.68%	3.73%	3.93%	4.60%
Feb.	3.62	3.68	3.96	4.23
Mar.	3.67	3.73	4.13	4.25
Apr.	3.66	3.72	3.95	4.25
May	3.63	3.69	4.01	4.23
June	3.64	3.70	3.99	4.20
July	3.74	3.79	4.04	4.19
Aug.	3.94	3.98	4.29	4.44
Sept.	4.17	4.24	4.55	4.69
Oct.	4.25	4.29	4.56	4.74
Nov.	4.22	4.25	4.47	4.67
Dec.	4.19	4.22	4.49	4.65
Avg.	3.87%	3.92%	4.20%	4.43%
1959				
Jan.	4.23%	4.27%	4.52%	4.71%
Feb.	4.25	4.31	4.50	4.77
Mar.	4.24	4.30	4.47	4.69
Apr.	4.31	4.40	4.56	4.68
May	4.48	4.57	4.77	4.87
June	4.56	4.67	4.86	4.97
July	4.60	4.64	4.88	5.03
Aug.	4.54	4.60	4.89	5.04
Sept.	4.62	4.72	5.03	5.17
Oct.	4.74	4.79	4.96	5.29
Nov.	4.66	4.68	4.90	5.20
Dec.	4.65	4.71	4.96	5.13
Avg.	4.49%	4.56%	4.78%	4.96%
1960				
Jan.	4.68%	4.76%	5.02%	5.20%
Feb.	4.63	4.68	5.00	5.23

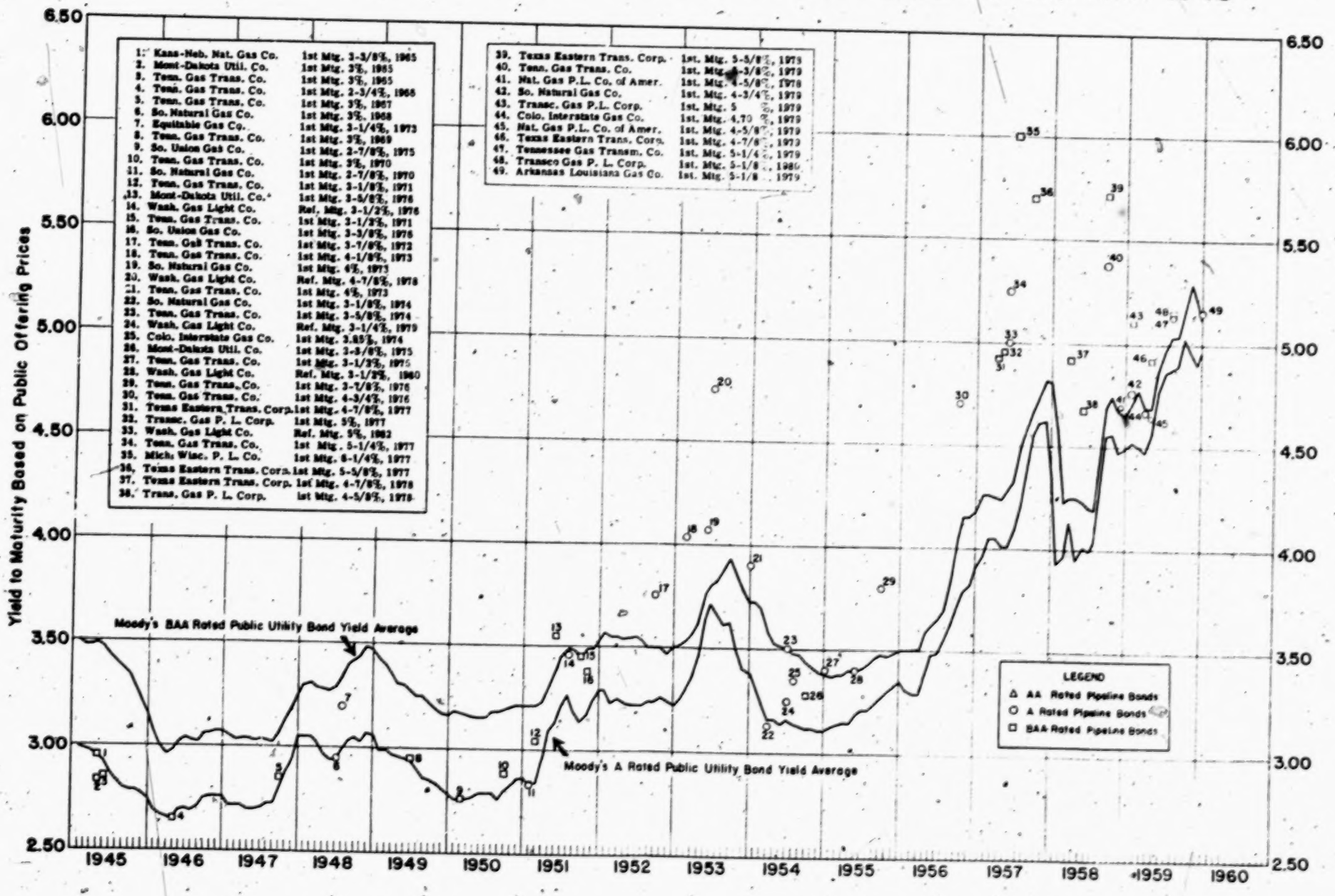
MOODY'S BOND YIELD AVERAGES
OF 40 PUBLIC UTILITIES ACCORDING TO RATINGS
1920 TO DATE INCLUSIVE



(2287—blank page; 2288—blank page; 2289—Chart—omitted in transcript)

2286

PUBLIC OFFERINGS OF NATURAL GAS PIPELINE MORTGAGE BONDS FROM 1945



PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPELINE COMPANY MORTGAGE BONDS SINCE JANUARY 1, 1945

No.	Company (a)	Issue (b)	Offering Date (c)	Principal Amount in Millions (d)	Moody's Rating at Offering (e)	Price to Public Amount (f)	Price to Public Yield (g)	Net Proceeds to Company Amount (h)	Net Proceeds to Company Cost (i)	Cost of Flotation % of Public Offering Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold* (l)	Notes (m)
1.	Kans-Neb. Nat. Gas Co. Inc.	1st Mtg. S.F.,3-3/8%, 1965	Apr. 1945	$ 4.5	Baa	106.38	2.95%	104.08	3.10%	2.30	2.2	N.S.	
2.	Montana-Dakota Util. Co.	1st Mtg. 3%, 1965	Apr. 1945	7.5	Baa	102.62	2.83	101.06	2.93	1.56	1.5	C.B.	
3.	Tennessee Gas Trans. Co.	1st Mtg. PL, 3%, 1965	May 1945	35.0	Baa	102.25	2.85	99.74	3.02	2.51	2.5	N.S.	C. 5-13-46 @ 102.50
4.	Tennessee Gas Trans.Co.	1st Mtg. PL, 2-3/4%, 1966	Apr. 1946	35.0	Baa 1/	101.50	2.65	100.00	2.75	1.50	1.5	N.S.	
5.	Tennessee Gas Trans.Co.	1st Mtg. PL, 3%, 1967	Sept.1947	40.0	Baa 1/	102.25	2.85	100.73	2.95	1.52	1.5	N.S.	
6.	Southern Natural Gas Co.	1st Mtg. 3%, 1968	June 1948	28.0	A	100.75	2.95	99.46	3.04	1.29	1.3	C.B.	
7.	Equitable Gas Company	1st Mtg. 3-1/4%, 1973	July 1948	14.0	A	100.84	3.20	99.30	3.29	1.54	1.5	C.B.	
8.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 3%, 1969	June 1949	50.0	Baa 1/	100.75	2.95	99.95	3.00	0.80	0.8	C.B.	
9.	Southern Union Gas Co.	1st Mtg. S.F. 2-7/8%, 1975	Feb. 1950	18.0	Baa 2/	102.00	2.76	101.64 3/	2.78	0.36	0.4	N.S.	
10.	Tennessee Gas Trans. Co.	1st Mtg. P. L. 3 %, 1970	Sept.1950	40.0	Baa 1/	101.75	2.89	100.63	2.96	1.12	1.1	C.B.	
11.	Southern Nat. Gas Co.	1st Mtg. PL.S.F. 2-7/8%,1970	Jan. 1951	17.5	A	100.68	2.83	99.57	2.90	1.11	1.1	C.B.	
12.	Tennessee Gas Trans. Co.	1st Mtg. 3-1/8%, 1971	Feb. 1951	35.0	Baa 1/	101.25	3.04	100.80	3.07	0.44	0.5	C.B.	
13.	Montana-Dakota Util Co.	1st Mtg. 3-5/8%, 1976	May 1951	3.0	Baa	101.24	3.55	99.52	3.65	1.72	1.7	C.B.	
14.	Washington Gas Light Co.	Ref. 3-1/2%, 1976	July 1951	9.0	A	100.67	3.46	99.31	3.54	1.36	1.4	C.B.	
15.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 3-1/2%, 1971	Sept.1951	45.0	Baa 1/	100.72	3.45	99.94	3.50	0.78	0.8	C.B.	
16.	Southern Union Gas Co.	1st Mtg. 3-3/8%, 1976	Oct. 1951	5.0	Baa 2/	100.00	3.38	98.31	3.48	1.69	1.7	N.S.	
17.	Tennessee Gas Trans. Co.	1st Mtg. 3-7/8%, 1972	Sept.1952	40.0	A	101.75	3.75	100.49	3.84	1.26	1.2	C.B.	C. 1-13-55 @ 104.25
18.	Tennessee Gas Trans. Co.	1st Mtg. P.L.,4-1/8%, 1973	Feb. 1953	30.0	A	101.30	4.03	99.78	4.14	1.52	1.5	C.B.	C. 1-13-55 @ [illegible]
19.	Southern Nat. Gas Co.	1st Mtg. P. L. 4%, 1973	May 1953	30.0	A	99.00	4.07	97.61	4.18	1.39	1.4	C.B.	
20.	Washington Gas Light Co.	Ref. Mtg. 4-7/8%, 1978	June 1953	7.0	A	101.82	4.75	99.41	4.91	2.41	2.4	C.B.	C. 12-31-53 @ 105.52
21.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 4%, 1973	Dec. 1953	25.0	A	101.38	3.90	100.01	4.00	1.37	1.4	C.B.	C. 1-13-55 @ 105.10
22.	Southern Nat. Gas Co.	1st Mtg. P. L. 3-1/8%, 1974	Mar. 1954	20.0	A	100.00	3.13	98.93	3.20	1.07	1.1	C.B.	
23.	Tennessee Gas Trans. Co.	1st Mtg. P. L. 3-5/8%, 1974	June 1954	25.0	A	101.79	3.50	100.58	3.58	1.21	1.2	C.B.	
24.	Washington Gas Light Co.	Ref. Mtg. P. L. 3-1/4%, 1979	June 1954	5.0	A	100.00	3.25	98.13	3.36	1.87	1.9	C.B.	
25.	Colo. Interstate Gas Co.	1st Mtg. P.L. 3.35%, 1974	July 1954	30.0	A	100.00	3.35	98.24	3.50	1.76	1.8	N.S.	
26.	Montana-Dakota Util Co.	1st Mtg. S.F. 3-3/8%, 1975	Sept.1954	7.0 5/	Baa	101.41	3.28	100.25	3.36	1.16	1.1	C.B.	
27.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 3-1/2%, 1975	Dec. 1954	125.0	A	101.44	3.40	100.11	3.49	1.34	1.3	N.S.	
28.	Washington Gas Light Co.	Ref. Mtg. 3-1/2%, 1980	May 1955	8.0	A	101.68	3.40	100.33	3.48	1.35	1.3	C.B.	
29.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 3-7/8%, 1976	Sept.1955	50.0	A	101.06	3.80	99.53	3.91	1.53	1.5	N.S.	
30.	Tennessee Gas Trans. Co.	1st Mtg. P. L. 4-3/4%, 1976	Sept.1956	50.0	A	100.65	4.70	99.07	4.82	1.58	1.6	N.S.	

* C.B., Competitive bidding; N.S. Negotiated sale.

For further footnotes see following page.

List continued on following page

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPELINE COMPANY MORTGAGE BONDS SINCE JANUARY 1, 1945 - Continued

No.	Company (a)	Issue (b)	Offering Date (c)	Principal Amount in Millions (d)	Moody's Rating at Offering (e)	Price to Public Amount (f)	Price to Public Yield (g)	Net Proceeds to Company Amount (h)	Net Proceeds to Company Cost (i)	Cost of Flotation Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold* (l)	Notes (m)
31.	Texas Eastern Trans. Co.	1st Mtg. P.L. 4-7/8%, 1977	Mar. 1957	$40.0	Baa	99.50	4.92%	97.96	5.04	1.54	1.5	N.S.	Non-ref. prior to 1967.
32.	Transco. Gas P. L.Corp.	1st Mtg. P. L. 5 %, 1977	Apr. 1957	50.0	Baa	100.63	4.95	98.98	5.08	1.65	1.6	N.S.	Non-ref. prior to 1967.
33.	Washington Gas Light Co.	Ref. Mtg. 5%, 1982	May 1957	8.0	A	100.00	5.00	98.51	5.12	1.49	1.5	C.B.	
34.	Tennessee Gas Trans. Co.	1st Mtg. P. L. 5-1/4%, 1977	May 1957	50.0	A	100.00	5.25	98.45	5.38	1.55	1.6	N.S.	Non-red. prior to 1962 ex. for S.F.
35.	Mich. Wisconsin P. L. Co.	1st Mtg. P.L. 6-1/4%, 1977	June 1957	30.0	Baa	102.89	6.00	100.20	6.23	2.69	2.6	C.B.	
36.	Texas Eastern Transm. Corp.	1st Mtg. P.L. 5-5/8%, 1977	Sept.1957	30.0	Baa	99.00	5.70	97.48	5.84	1.52	1.5	N.S.	Non-ref. prior to 1967
37.	Texas Eastern Transm. Corp.	1st Mtg. P.L. 4-7/8%, 1973	Mar. 1958	25.0	Baa	99.50	4.92	97.96	5.04	1.54	1.5	N.S.	Non-ref. prior to 1963
38.	Transco Gas P.L. Corp.	1st Mtg. P.L. 4-5/8%, 1978	May 1958	25.0	Baa	99.25	4.68	97.57	4.82	1.68	1.7	N.S.	Non-ref. prior to 1963
39.	Texas Eastern Transm. Corp.	1st Mtg. P.L. 5-5/8%, 1978	Sept.1958	35.0	Baa	99.00	5.71	97.56	5.83	1.44	1.5	N.S.	Non-ref. prior to 1963
40.	Tennessee Gas Transm. Co.	1st Mtg. P.L. 5-3/8%, 1979	Sept.1958	50.0	A	100.00	5.38	98.48	5.50	1.52	1.5	N.S.	Non-ref. prior to 1964
41.	Nat. Gas P.L. Co. of Amer.	1st Mtg. P.L. 4-5/8%, 1978	Nov. 1958	30.0	A	99.25	4.68	97.88	4.79	1.37	1.4	N.S.	Non-ref. prior to 1963
42.	So. Natural Gas Co.	1st Mtg. P.L. 4-3/4%, 1979	Jan. 1959	35.0	A	100.00	4.75					C.B.	Non-ref. prior to 1964
43.	Transco. Gas P.L. Corp.	1st Mtg. P.L. 5% , 1979	Jan. 1959	35.0	Baa	98.74	5.10					N.S.	Non-ref. prior to 1964
44.	Colo. Interstate Gas Co.	1st Mtg. P.L. 4.70% , 1979	Mar. 1959	33.0	A	100.38	4.67					N.S.	Non-ref. prior to 1964
45.	Nat. Gas P.L. Co. of Amer.	1st Mtg. P.L. 4-5/8%, 1979	Apr. 1959	20.0	A	99.68	4.65					N.S.	Non-ref. prior to 1964
46.	Texas Eastern Trans. Corp.	1st Mtg. P.L. 4-7/8%, 1979	Apr. 1959	45.0	Baa	99.50	4.92					N.S.	Non-ref. prior to 1964
47.	Tennessee Gas Trans. Co.	1st Mtg. P.L. 5-1/4%, 1979	July 1959	50.0	A	101.25	5.15					N.S.	Non-ref. prior to 1964
48.	Transco. Gas P.L. Corp.	1st Mtg. P.L. 5-1/8%, 1980	July 1959	20.0	Baa	99.69	5.15					N.S.	Non-ref. prior to 1964
49.	Arkansas Louisiana Gas Co.	1st Mtg. 5-1/8%, 1979	Dec. 1959	16.0	A	99.69	5.15					N.S.	Non-ref. prior to 1964

* C.B., Competitive bidding; N.S. Negotiated sale.

1/ Rating raised to A Nov.24, 1951.
2/ Rating raised to A May 10, 1952 and AA, May 7, 1957.
3/ Gross proceeds to issuing company; net proceeds not available.
4/ "Effective September 28, 1950, the public offering price of the Bonds set forth . . .was changed to 101.45% of the principal amount thereof and accrued interest, and the selling concession to Selected Dealers . . was reduced to 1/8 of 1% of the principal amount of the Bonds. Approximately $21,400,000 of the principal amount of the Bonds remained unsold by the Purchasers as of September 27, 1950."
5/ Concurrently with this offering Montana-Dakota issued $5,000,000 1st 3-1/2% bonds known as "electric bonds".

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPE LINE COMPANY DEBENTURES SINCE JANUARY 1, 1950

No.	Company (a)	Issue (b)	Offered during (c)	Principal Amt. Millions (d)	Moody's Rating at Offering (e)	Public Offering Price Amount (f)	Public Offering Price Yield (g)	Net Proceeds to Company Amount (h)	Net Proceeds to Company Cost (i)	Cost of Flotation Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold* (l)	Notes (m)
1.	Panhandle Eastern P. L. Co.	2-3/4%, 1975	July 1950	$20.0	A	99.11	2.80%	98.09	2.85%	1.02	1.0	N.S.	No prior mtge liens
2.	North Penn Gas Company	5%, 1971	June 1951	2.7	Baa	103.20	4.75	97.67	5.18	5.53	5.4	C.B.	C. 3-9-53 @ 104.93
3.	Mt. Fuel Supply Co.	3-1/2%, 1971	Oct. 1951	15.0	A	100.72	3.45	99.15	3.56	1.57	1.5	N.S.	No prior mtge liens
4.	Southern Union Gas Co.	S.F. 3-5/8%, 1971	Oct. 1951	5.0	Ba 1/	100.35	3.60	98.66	3.72	1.69	1.7	N.S.	
5.	Tennessee Gas Trans. Co.	4-7/8%, 1971	Dec. 1951	25.0	Baa	102.25	4.70	100.21	4.73	2.04	2.0	C.B.	C. 10-22-54 @ 104.70
6.	Southern Union Gas Co.	S.F. 3-5/8%, 1972	May 1952	5.0	Baa	100.00	3.63	98.46	3.74	1.54	1.5	N.S.	
7.	Northern Natural Gas Co.	S.F. 4-1/2%, 1973	June 1953	40.0	A	102.00	4.35	100.21	4.48	1.79	1.8	C.B.	(No prior mtge liens (C. 6-12-54 @ 106
8.	Tennessee Gas Trans. Co.	5%, 1973	Sept.1953	20.0	Baa	101.90	4.85	100.17	4.99	1.73	1.7	C.B.	C. 10-22-54 @ 104.65
9.	Northern Natural Gas Co.	S.F. 3-5/8%, 1973	Nov. 1953	25.0	A	101.00	3.55	99.84	3.63	1.16	1.1	N.S.	No prior mtge liens
10.	Texas Eastern Trans. Corp.	4-3/8%, 1974	Mar. 1954	17.0	Ba	100.00	4.38	98.35	4.38	1.65	1.7	N.S.	
11.	Northern Natural Gas Co.	S.F. 3-1/4%, 1973	May 1954	40.0	A	101.45	3.15	100.40	3.22	1.05	1.0	N.S.	No prior mtge liens
12.	Mt. Fuel Supply Co.	3-1/8%, 1974	June 1954	12.0	A	99.25	3.18	97.67	3.28	1.58	1.6	N.S.	No prior mtge liens
13.	Panhandle Eastern P. L. Co.	3-1/8%, 1974	June 1954	35.0	A	99.63	3.15	98.40	3.23	1.23	1.2	N.S.	No prior mtge liens
14.	Northern Natural Gas Co.	S.F. 3-1/4%, 1974	July 1954	25.0	A	100.50	3.22	99.38	3.29	1.12	1.1	N.S.	No prior mtge liens
15.	Tennessee Gas Trans. Co.	4-1/4%, 1974	Sept.1954	65.0	Baa	102.00	4.10	100.23	4.23	1.77	1.7	N.S.	
16.	Tennessee Gas Trans. Co.	4%, 1975	Apr. 1955	25.0	Baa	101.25	3.91	99.73	4.02	1.52	1.5	N.S.	
17.	Southern Union Gas Co.	S.F. 4-1/4%, 1976	June 1956	10.0	Baa	100.67	4.20	99.27	4.30	1.40	1.4	N.S.	
18.	Tennessee Gas Trans. Co.	4-1/2%, 1977	July 1956	30.0	Baa	100.00	4.50	98.48	4.62	1.52	1.5	N.S.	
19.	Texas Eastern Trans. Corp.	5-1/2%, 1976	Dec. 1956	30.0	Ba	100.00	5.50	96.59	5.79	1.91	1.9	N.S.	
20.	Lone Star Gas Co.	4-5/8%, 1982	Apr. 1957	30.0	A	101.00	4.54	99.49	4.66	1.51	1.5	N.S.	(No prior mtge liens (Non-ref. prior to 1967
21.	Northern Natural Gas Co.	S.F. 4-1/2%, 1976	Apr. 1957	30.0	A	99.50	4.54	98.22	4.66	1.28	1.3	N.S.	(No prior mtge liens (Non-ref.prior to 1964
22.	Texas Eastern Trans. Corp.	6%, 1977	June 1957	15.0	Ba	98.50	6.13	96.34	6.33	2.16	2.2	N.S.	Non-ref prior to 1967
23.	Tennessee Gas Trans. Corp.	6%, 1977	July 1957	25.0	Baa	99.00	6.09	97.20	6.25	1.89	2.8	N.S.	Non-ref.prior to 1967
24.	Southern Union Gas Co.	5-1/2%, 1982	Nov. 1957	9.0	Baa	100.00	5.50	98.54	5.61	1.46	1.5	N.S.	Non-ref.prior to 1964
25.	Transcontinental Gas P.L.Corp.	6-1/8%, 1978	Nov. 1957	20.0	Ba	99.50	6.17	97.33	6.36	2.17	2.2	N.S.	Non-ref. prior to 1967
26.	Northern Natural Gas Co.	4-5/8%, 1977	Dec. 1957	25.0	A	100.00	4.63	98.77	4.72	1.23	1.2	N.S.	Non-ref. prior to 1962
27.	Mississippi River Fuel Corp.	S.F. 4-3/4%, 1978	Mar. 1958	30.0	Baa	100.50	4.71	99.08	4.82	1.42	1.4	N.S.	Non-ref. prior to 1963
28.	Tennessee Gas Trans. Corp.	5%, 1978	Apr. 1958	30.0	Baa	100.00	5.00	98.16	5.15	1.84	1.8	N.S.	Non-ref. prior to 1963
29.	Mountain Fuel Supply Co.	4%, 1983	June 1958	16.0	A	100.00	4.00	98.49	4.10	1.51	1.5	N.S.	Non-ref. prior to 1963
30.	Southern Natural Gas Co.	4-1/2%, 1978	July 1958	30.0	Baa	100.00	4.50	98.76	4.60	1.24	1.2	C.B.	Non-ref. prior to 1963

*C.B. - Competitive bidding. N.S. - Negotiated sale.

1/ Raised to Baa May 10, 1952

Source: Data taken from Moody's Public Utilities Supplements, Bank and Quotation Record, Standard & Poor's Bond Guide, Registration Statements, Securities and Exchange Commission Reports and Annual Reports to FPC.

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPE LINE COMPANY DEBENTURES (Continued)
SINCE JANUARY 1, 1950

No.	Company (a)	Issue (b)	Offered during (c)	Principal Amt. Millions (d)	Moody's Rating at Offering (e)	Public Offering Price Amount (f)	Public Offering Price Yield (g)	Net Proceeds to Company Amount (h)	Net Proceeds to Company Cost (i)	Cost of Flotation Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold* (l)	Notes (m)
31.	Natural Gas Pipeline Co. of Am.	4-3/4%, 1978	July, 1958	$35.0	Baa-	$ 99.00	4.83%	97.33	4.96%	1.67	1.7	N.S.	Non-ref. prior to 1963
32.	Northern Natural Gas Co.	4-5/8%, 1978	Nov. 1958	30.0	A	100.32	4.60	99.05	4.70	1.27	1.3	N.S.	Non-ref. prior to 1963
33.	Northern Natural Gas Co.	5-1/8%, 1979	Oct. 1959	25.0	A	100.00	5.13					N.S.	Non-ref. prior to 1964

*C.B. - Competitive bidding. N.S. - Negotiated sale.

Source: Data taken from Moody's Public Utilities Supplements, Bank and Quotation Record, Standard & Poor's Bond Guide, Registration Statements, Securities and Exchange Commission Reports and Annual Reports to FPC.

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPE LINE COMPANY PREFERRED STOCK SINCE JANUARY 1, 1945

No.	Company (a)	Issue (b)	Offered during (c)	Number of Shares (d)	Standard & Poor's Rating (e)	Public Offering Price For Share (f)	Public Offering Price Yield (g)	Net Proceeds to Company For Share (h)	Net Proceeds to Company Cost % (i)	Cost of Flotation Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold (l)	Notes (z)
1.	Tennessee Gas Trans. Co.	5%, $100 par	May 1945	75,000		104.00	4.81	100.20	4.99	3.80	3.65	N.S.	Called May,1946 @ 105
2.	Panhandle Eastern P. L. Co.	4%, $100 par	July 1945	140,000		104.00	3.85	101.38	3.95	2.62	2.52	N.S.	
3.	Southern Union Gas Company	4-1/4%, $100 par	Jan. 1946	12,178		101.50	4.19	98.26	4.33	3.24	3.19	N.S.	
4.	Tennessee Gas Trans. Co.	4.10%, $100 par	April 1946	100,000		106.00	3.86	103.49	3.96	2.51	2.37	N.S.	
5.	El Paso Natural Gas Co.	4.10%, $100 par	July 1946	63,264		109.00	3.76	106.52	3.85	2.48	2.28	N.S.	
6.	Tennessee Gas Trans. Co.	4.25%, $100 par	Sept.1947	100,000		103.00	4.10	99.92	4.25	3.08	2.99	N.S.	
7.	Southern Union Gas Co.	5%, $100 par	June 1948	25,000		100.00	5.00	95.10	5.26	4.90	4.90	N.S.	Called April,1951 @ 104
8.	Tennessee Gas Trans.Co.	4.65%, $100 par	Sept.1949	100,000		103.50	4.49	99.53	4.67	3.97	3.84	N.S.	
9.	Southern Union Gas Co.	4.75%, $100 par	Feb. 1950	30,000		104.00	4.57	100.29	4.74	3.71	3.57	N.S.	
10.	Tennessee Gas Trans. Co.	4.60%, $100 par	April 1950	100,000		105.00	4.38	101.13	4.55	3.87	3.69	N.S.	
11.	Washington Gas Light Co.	$4.25, no par	June 1950	26,098		103.00	4.13	100.08	4.25	2.92	2.83	N.S.	
12.	Tennessee Gas Trans. Co.	4.64%, $100 par	Oct. 1950	100,000		103.10	4.50	99.63	4.66	3.47	3.37	N.S.	
13.	Kans-Neb. Nat. Gas Co. Inc.	$5.00, no par	Feb. 1951	10,950		105.00	4.76	101.31	4.94	3.69	3.51	N.S.	
14.	Transcontinental Gas P.L. Corp.	$2.55, no par	Mar. 1951	550,000		52.00	4.90	49.79	5.12	2.21	4.25	N.S.	
15.	Tennessee Gas Trans. Co.	5.10%, $100 par	May 1951	100,000		102.00	5.00	98.25	5.19	3.75	3.68	N.S.	
16.	Texas Gas Trans. Corp.	5.40%, $100 par	July 1951	100,000		100.00	5.40	95.73	5.64	4.27	4.27	N.S.	
17.	El Paso Natural Gas Co.	5-1/2%, $100 par	Dec. 1951	100,000		102.00	5.39	97.70	5.63	4.30	4.22	N.S.	
18.	El Paso Natural Gas Co.	5.36%, $100 par	Mar. 1952	100,000		100.00	5.36	96.37	5.56	3.63	3.63	N.S.	
19.	Tennessee Gas Trans. Co.	5.25%, $100 par	May 1952	100,000		100.00	5.25	96.10	5.46	3.90	3.90	N.S.	
20.	Southern Union Gas Co.	5%, $100 par	May 1952	30,000		100.00	5.00	96.04	5.21	3.96	3.96	N.S.	
21.	Texas Eastern Trans. Corp.	5.50%, $100 par	Aug. 1952	190,000		100.00	5.50	96.02	5.73	3.98	3.98	N.S.	
22.	El Paso Natural Gas Co.	5.65%, $100 par	July 1953	200,000		100.00	5.65	96.43	5.86	3.57	3.57	N.S.	
23.	Tennessee Gas Trans. Co.	5.85%, $100 par	Sept.1953	100,000		100.00	5.85	96.38	6.07	3.62	3.62	N.S.	Called July,1955 @ 105
24.	Northern Natural Gas Co.	5.50%, $100 par	Sept.1953	250,000		100.00	5.50	97.21	5.66	2.79	2.79	N.S.	
25.	Tennessee Gas Trans. Co.	5.12%, $100 par	Mar. 1954	100,000		100.38	5.10	96.89	5.28	3.49	3.48	N.S.	

Continued on following page.

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPE LINE COMPANY PREFERRED STOCK SINCE JANUARY 1, 1945 (Cont'd)

No.	Company (a)	Issue (b)	Offered During (c)	Number of Shares (d)	Standard & Poor's Rating (e)	Public Offering Price Per Share (f)	Public Offering Price Yield (g)	Net Proceeds to Company Per Share (h)	Net Proceeds to Company Cost % (i)	Cost of Flotation Amount (j)	Cost of Flotation % of Public Offering Price (k)	How Sold (l)	Notes (m)
26.	Kans-Neb. Nat.Gas Co. Inc.	$5.00, no par	May 1954	10,000		101.00	4.95	96.51	5.18	4.49	4.45	N.S.	
27.	Colorado Interstate Gas Co.	5%, $100 par	July 1954	110,000		100.00	5.00	96.95	5.16	3.05	3.05	N.S.	
28.	Texas Gas Trans. Corp.	4.96%, $100 par	Sept. 1954	75,000		100.00	4.96	96.35	5.15	3.65	3.65	N.S.	
29.	Transcontinental Gas PL Corp.	$4.90, no par	April 1955	150,000		100.00	4.90	96.49	5.08	3.51	3.51	N.S.	Call. $105.00 1st.Yr.
30.	Tennessee Gas Trans. Co.	4.90%, $100 par	June 1955	200,000		100.00	4.90	96.67	5.07	3.33	3.33	N.S.	Call. $105.00 1st. 3 Yrs.
31.	Texas Eastern Trans. Corp.	5%, $100 par	July 1955	160,000		100.00	5.00	96.56	5.18	3.44	3.44	N.S.	Call. $105.00 1st. 2 Yrs.
32.	Montana-Dakota Utilities Co.	4.70%, $100 par	Nov. 1955	50,000		100.00	4.70	97.42	4.82	2.58	2.58	N.S.	Call. $105.00 1st. 5 Yrs.
33.	Southern Union Gas Co.	5.05%, $100 par	June 1956	40,000		100.00	5.05	97.65	5.17	2.35	2.35	N.S.	Call. $105.00 1st. Yr.
34.	El Paso Natural Gas Co.	5.50%, $100 par	Aug. 1956	250,000		100.00	5.50	96.60	5.69	3.40	3.40	N.S.	Call. $105.50 1st. Yr.
35.	Texas Eastern Trans. Corp.	5.85%, $100 par	Oct. 1956	150,000		100.00	5.85	96.56	6.06	3.44	3.44	N.S.	Call. $106.00 1st. 5 Yrs.
36.	El Paso Natural Gas Co.	5.68%, $100 par	Mar. 1957	150,000		100.00	5.68	96.46	5.89	3.54	3.54	N.S.	Call. $110.00 1st.5 Yrs.
37.	Transcontinental Gas PL Corp.	$5.96, no par	April 1957	100,000		100.00	5.96	96.61	6.17	3.39	3.39	N.S.	Call. $110.00 1st. 5 Yrs.
38.	El Paso Natural Gas Co.	6.40%, $100 par	Aug. 1957	100,000		100.00	6.40	95.90	6.67	4.10	4.10	N.S.	Call. $115.00 1st. 5 Yrs.
39.	Northern Natural Gas Co.	5.80%, $100 par	Oct. 1957	160,000		100.00	5.80	97.16	5.97	2.84	2.84	N.S.	Call. $105.00 1st. 5 Yrs.
40.	Texas Eastern Trans. Corp.	$6.70, $100 par	Nov. 1957	100,000		100.00	6.70	96.24	6.96	3.76	3.76	N.S.	Call. $107.50 1st. Yr.
41.	Transcontinental Gas PL Corp.	$5.70, no par	May, 1958	150,000		100.00	5.70	96.65	5.90	3.35	3.35	N.S.	Call. $110.00 1st 5 Yrs.
42.	Texas Eastern Trans. Corp.	5.80%, $100 par	June 1958	150,000		100.00	5.80	96.72	6.00	3.28	3.28	N.S.	Call. $110.00 1st 5 Yrs.
43.	Southern Union Gas Co.	5.35%, $100 par	June 1958	30,000		100.00	5.35	97.07	5.51	2.93	2.93	N.S.	Call. $108.00 1st 5 Yrs.
44.	Washington Gas Light Co.	$5.00, no par	July 1958	60,000		100.00	5.00	97.64	5.12	2.36	2.36	N.S.	Call. $107.50 1st 5 Yrs.
45.	Natural Gas P.L. Co. of America	5-3/4%, $100 par	July 1958	150,000		100.00	5.75	96.89	5.93	3.11	3.11	N.S.	Call. $110.00 1st 5 Yrs.
46.	Colo. Interstate Gas Co.	5.35%, $100 par	Mar. 1959	120,000		100.00	5.35					N.S.	Call. $105.50 1st 5 Yrs.
47.	Texas Eastern Trans. Corp.	5.60%, $100 par	Mar. 1959	150,000		100.00	5.60					N.S.	Call. $105.60 1st 5 Yrs.
48.	Transco. Gas P.L. Corp.	$5.60, no par	July 1959	150,000		100.00	5.60					N.S.	Call. $110.00 1st 5 Yrs.
49.	Northern Natural Gas Co.	5.60%, $100 par	Oct. 1959	200,000		100.00	5.60					N.S.	Call. $115.00 1st 5 Yrs.

N.S. Negotiated Sale.

Source: Data taken from Moody's Public Utility Supplements and Manuals, Standard & Poor's Stock Guide, Bank and Quotation Record, Registration Statements, Securities and Exchange Commission Reports and Annual Reports to FPC.

PRINCIPAL PUBLIC OFFERINGS OF NATURAL GAS PIPE LINE COMPANY COMMON STOCK

1946 TO DATE

No.	Common Stock of (a)	Approximate Offering Date (b)	No. of Shares Offered (c)	Size of Offering (000) (d)	Per Share: Price to Public (e)	Per Share: Price to Underwriter (f)	Per Share: Expenses (g)	Per Share: Net Proceeds (h)	Latest available earnings: 12 mos. to (i)	Latest available earnings: Per Share (j)	Ratio of earnings to: Price to Public (k)	Ratio of earnings to: Price to Underwriters (l)	Ratio of earnings to: Net Proceeds (m)
PL-1	Tennessee Gas Trans. Co.	Jan. 1946	812,100	1/ $ 9,745	$12.00	$11.10	$0.09	$ 11.01	Nov. 1945	2.07	17.3	16.6	16.8
PL-2	Tennessee Gas. Trans. Co.	Apr. 1946	484,444	2/ 9,568	19.75	18.65	.03 3/	18.62	Dec. 1945	2.16	12.5	13.2	13.2
PL-3	Texas Eastern Trans. Corp.	Nov. 1947	3,550,000	4/ 33,725	9.50	8.50	.05	8.45	5/	5/	-	-	-
PL-4	Northern Natural Gas Co.	Dec. 1947	710,500	6/ 19,183	27.00	25.80	.10	25.70	Sept. 1947	3.43	12.7	13.3	13.3
PL-5	Tennessee Gas Trans. Co.	Sept. 1948	400,000	12,100	30.25	28.60	.19	28.41	Dec. 1947	2.40	7.9	8.4	8.4
PL-6	Miss. River Fuel Corp.	Jan. 1949	144,200	7/ 4,326	30.00	28.00	.49	27.51	Dec. 1947	2.46	8.2	8.8	8.9
PL-7	Miss. River Fuel Corp.	Apr. 1949	435,282	8/ 13,058	30.00	8/	8/	-8/	Dec. 1948	3.49	11.6	-	-
PL-8	Texas Gas Trans. Corp.	Aug. 1949	218,625	7/ 2,624	12.00	11.10	.18	10.92	May 1949	0.75	6.3	6.8	6.9
PL-9	Tennessee Gas Trans. Co.	Sept. 1949	400,000	12,100	30.25	28.80	.12	28.68	July 1949	2.24	7.4	7.8	7.8
PL-10	Texas Gas Trans. Corp.	Mar. 1950	193,306	7/ 3,528	18.25	17.13	.41	16.72	Dec. 1949	0.81	4.4	4.7	4.8
PL-11	Tennessee Gas Trans. Co.	Oct. 1950	250,000	7,500	30.00	28.55	.20	28.35	Aug. 1950	1.84	6.1	6.4	6.5
PL-12	Tennessee Gas Trans. Co.	Apr. 1951	400,000	9,600	24.00	22.75	.11	22.64	Dec. 1950	1.73	7.2	7.6	7.6
PL-13	Colorado Interstate Gas Co.	Apr. 1952	966,000	7/ 25,841	26.75	25.75	n.a.	-	Dec. 1951	2.88	7.0	7.3	-
PL-14	Tennessee Gas Trans. Co.	May 1952	250,000	7,375	29.50	28.10	.12	27.98	Mar. 1952	1.73	5.9	6.2	6.2
PL-15	Texas Gas Trans. Corp.	Aug. 1952	350,000	6,081	17.38	16.48	.13	16.35	June 1952	1.49	8.6	9.0	9.1
PL-16	Tennessee Gas Trans. Co.	May 1953	1,000,000	22,750	22.75	21.25	.06	21.19	Feb. 1953	1.86	8.2	8.8	8.8
PL-17	Texas Gas Trans. Corp.	Mar. 1954	200,000	7/ 3,450	17.25	16.35	.17	16.19	Dec. 1953	1.59	9.2	9.7	9.8
PL-18	Tennessee Gas Trans. Co.	Sept. 1955	400,000	16,550	41.375	39.475	.12	39.35	June 1955	2.01	4.9	5.1	5.1
PL-19	Colorado Interstate Gas Co.	Nov. 1955	256,503	7/ 14,729	57.50	55.50	n.a.	n.a.	Aug. 1955	3.85	6.7	6.9	-
PL-20	Transco. Gas P.L. Corp.	Nov. 1957	1,000,000	17,750	17.75	16.55	.15	16.40	Aug. 1957	1.64	9.2	9.9	10.0
PL-21	Tennessee Gas Trans. Co.	Feb. 1958	1,000,000	30,750	30.75	29.05	.07	28.98	Nov. 1957	2.00	6.5	6.9	6.9
PL-22	Transco. Gas P.L. Corp.	Oct. 1958	600,000	14,095	23.38	21.94	.12	21.82	June 1958	1.46	6.3	6.7	6.7
PL-23	Tennessee Gas Trans. Co.	Feb. 1960	1,600,000	55,200	34.50	32.75	.08	32.67	Dec. 1959	1.93	5.6	5.9	5.9

n.a. Not available.

1/ Of which 238,000 represented a sale by the issuing company, and 574,100 shares represented a disposition by certain stockholders.

2/ Of which 134,444 shares did not represent new financing.

3/ Company's Annual Report to the FPC (Form 2) for the year 1946 shows Common stock expense for the year as $31,382; SEC report shows expense applicable to the stock issued during January 1946 (No. PL-1,) as $21,420, leaving expenses applicable to this offering $10,412 or $0.03 a share.

4/ The total offering was 3,564,000 shares of which 3,550,000 shares represented an offering in behalf of the issuing company.

5/ Company had been operating less than a year when this stock was offered so earnings on a 12 mos. basis were not available.

6/ Represents a disposition by North American Light & Power Co.

7/ Represents a disposition by certain stockholders; does not represent financing by the issuing company.

8/ Represents, as to 305,688 shares, a disposition by United Gas Corp. and as to 129,594 shares, a disposition by underwriters of stock which they had acquired by exercising rights which they had purchased from United Gas Corp. The rights offering, which preceded this public offering, consisted of 327,610 shares which had been offered to stockholders of record April 12, 1949 on a 1-for-2 basis at $27.25 per share. The Company's Annual Report to the FPC (Form 2) for the year 1949 shows $111,971, or $0.34 a share, as the cost of issuing this stock.

PRINCIPAL RIGHTS OFFERINGS OF NATURAL GAS PIPE LINE COMPANY COMMON STOCKS

1946 TO DATE

No.	Common Stock of (a)	Record Date (b)	No. of Shares Offered (c)	Size of Offering (000) (d)	Basis of Offering 1 for (e)	Per Cent Subscribed (f)	Per Share: Market Price day before record (g)	Per Share: Subscription Price (h)	Per Share: Expenses (i)	Per Share: Net Proceeds (j)	Latest Available earnings: 12 mos to (k)	Latest Available earnings: Per Share (l)	Ratio of Earnings to: Market Price (m)	Ratio of Earnings to: Offering Price (n)	Ratio of Earnings to: Net Proceeds (o)
Pl-1	El Paso Natural Gas Co.	7-1-46	100,057	$ 4,202	6	97%	60	$42.00	$0.77	$ 41.23	Apr. '46	$3.39	5.7	8.1	8.2
Pl-2	Northern Natural Gas Co.	3-30-49	406,000	11,977	5	100	34-3/4	29.50	.18	29.32	Dec. '48	3.12	9.0	10.6	10.6
Pl-3	Miss. River Fuel Corp.	4-12-49	327,610	8,927	2	n.a.	31 b	27.25	.34	26.91	Dec. '48	3.49	11.3	12.8	13.0
Pl-4	Southern Natural Gas Co.	6-6-49	141,325	3,674	10	100	30	26.00	.44	25.56	Mar. '49	3.27	10.9	12.6	12.8
Pl-5	Miss. River Fuel Corp.	4-4-50	245,708	8,354	4	96	35-1/2 b	34.00	.54	33.46	Dec. '49	2.79	7.9	8.2	8.3
Pl-6	Northern Natural Gas Co.	5-3-50	304,500	9,592	8	100	35-7/8	31.50	.25	31.25	Mar. '50	2.76	7.7	8.8	8.8
Pl-7	Texas Ill. Nat.Gas P. Co.	7-17-50	1,750,000	17,500	0.3	99 1/	12-5/8 b	10.00	.03	9.97	n.a	n.a	-	-	-
Pl-8	El Paso Natural Gas Co.	9-19-50	230,000	4,910	10	100	23	21.38	.90	20.48	July '50	1.84	8.0	8.6	9.0
Pl-9	Texas Ill.Nat. Gas P. Co.	12-8-50	300,000	3,000	7-1/2	100 1/	17 b	10.00	.08	9.92	n.a.	n.a.	-	-	-
Pl-10	Southern Natural Gas Co.	1-30-51	155,546	3,133	10	100	39-1/8	33.00	.43	32.57	Oct. '50	3.39	9.9	11.9	11.9
Pl-11	Texas Eastern Trans.Corp.	3-7-52	610,937	10,386	8	100	19 b	17.00	.57	16.43	Dec. '51	1.76	9.3	10.4	10.7
Pl-12	El Paso Natural Gas Co.	3-24-53	883,882	28,726	4	83	36-5/8	32.50	1.03	31.50 u	Dec. '52	2.95	8.1	9.0	9.3
Pl-13	Northern Natural Gas Co.	5-5-53	548,100	19,321	5	82.5	39-1/4	35.25	.50	34.47 u	Dec. '52	1.48	3.8	4.2	4.3
Pl-14	Texas Ill. Nat. Gas P. Co.	5-25-53	956,250	16,495	2-2/3	86 1/	18-7/8 b	17.25	.07	17.18	Feb. '53	1.29	6.8	7.5	7.5
Pl-15	Northern Natural Gas Co.	5-25-54	365,400	13,885	9	100	41-1/2	38.00	.29	37.71	Mar. '54	2.91	7.0	7.7	7.7
Pl-16	Transco. Gas P.L. Corp.	10-1-56	441,250	7,060	16	100	17-1/8 b	16.00	.54	15.46	June '56	1.24	6.9	7.8	8.0
Pl-17	Northern Natural Gas Co.	1-28-58	456,813	21,813	5	100	51-1/2	47.75	.75	47.00	Sept.'57	3.69	7.2	7.7	7.9

Footnotes

n.a. - Not available b- Bid price u Reflects also proceeds and expenses related to sale of the unsubscribed shares.

1/ Peoples Gas Lt. & Coke Co. purchased all the unsubscribed shares at the subscription price.

2299—blank page)

DATA RELATIVE TO THE TEN NATURAL GAS PIPE LINE COMPANIES

Colorado Interstate Gas Company
El Paso Natural Gas Company
Mississippi River Fuel Corporation
Northern Natural Gas Company
Panhandle Eastern Pipe Line Company
Southern Natural Gas Company
Tennessee Gas Transmission Company
Texas Eastern Transmission Corporation
Texas Gas Transmission Corporation
Transcontinental Gas Pipe Line Corporation

(2302)

COLORADO INTERSTATE GAS COMPANY

Colorado Interstate Gas Company was incorporated in Delaware in 1928. Effective January 1, 1952, it merged with Canadian River Gas Company, a subsidiary which had been its chief source of natural gas. The Company operates a pipe line network of 3,470 miles from the Texas Panhandle and Kansas Hugoton gas fields to Denver, and an extension completed in January, 1957, through Wyoming, connecting with the Pacific Northwest line at Green River. The transmission compressor capacity at the end of 1958 was 104,845 HP. There are two subsidiaries: Natural Gas Producers, Inc., which supplies gas to, at wholesale, Brush and Sterling in northeastern Colorado; and Colorado Oil and Gas Corporation, which develops oil and gas properties.

In 1958 Colorado produced about 40 percent of its gas and purchased the remainder from various field suppliers. About 81 percent of the gas is sold to other gas utilities, among whom the principal customers are Public Service Company of Colorado and Natural Gas Pipeline Company of America. The remainder of the gas is sold to industrial consumers and various public authorities. The chief main-line industrial consumers are: Public Service Company of Colorado, Colorado Fuel and Iron Corporation and Ideal Cement Company.

As of December 31, 1958, Colorado estimated that it owned, or controlled by contract, a total of approximately 7.8 trillion cubic feet of natural gas.

COMMON STOCK - Outstanding December 31, 1958 - 1,753,383.6 ($5 par value shares).
Market - Over-the-Counter
Number of Common stockholders - 6,066 as of December 31, 1958.

		Per Share of Common Stock									
	Operating Revenue (Millions) 1/	Earnings 1/	Dividends 2/	Pay-Out %	Market Price				Yield* %	Year End Book Value	Earnings Price Ratio #
Year (a)	(b)	(c)	(d)	(e)	High (f)	Low (g)	Average (h)	Close (i)	(j)	(k)	(l)
1946	$ 6.96	$1.22	--	--	--	--	--	--	--	--	--
1947	8.50	1.51	--	--	--	--	--	--	--	--	--
1948	11.26	1.46	--	--	--	--	--	--	--	--	--
1949	12.68	1.49	$0.78	52.3	--	--	--	--	--	--	--
1950	15.72	1.67	0.91	54.5	--	--	--	--	--	--	--
1951	18.17	1.88	1.00	53.2	--	--	--	--	--	$13.67	--
1952	17.23	1.51	1.25	82.8	$34-3/4	$24-7/8	$29.81	$32-3/4B	4.2	13.83	--
1953	17.95	1.45	1.25	86.2	40	29-3/4	34.88	37-1/2B	3.6	14.03	4.6
1954 3/	27.88	1.45	1.25	86.2	51-3/4	37-3/8	44.56	50-3/4B	2.8	15.48	4.0
1955 3/	31.89	1.73	1.25	72.3	68-1/4	50	59.13	53-3/4B	2.1	19.65	5.0
1956 3/	36.12	1.87	1.25	66.8	77-1/2	54	65.75	74 B	1.9	16.57	7.7
1957 3/	49.34	2.24	1.25	55.8	81-1/2	33-3/8	57.44	36-1/4B	2.2	18.09	8.2
1958 3/	54.71	2.30	1.25	54.3	59	36-1/2	47.75	54-1/4B	2.6	17.87	6.6
1959			1.25		58-3/4	40-1/2	49.63	42-3/4B	2.5		5.3
1960											

* Based on average price. # Average of 12 month-end earnings-price ratios. B - bid price.

1/ Pro forma, combined earnings of constituent companies, after giving effect to elimination of intercompany transactions and reduction of gasoline sales and Federal income taxes. (Years 1946-1951)

2/ Equivalent to the dividends paid by the former Colorado Interstate Gas Co. on 1,250,000 no-par common shares, 1949, 1950 and 1951.

3/ Adjusted for retroactivity of the 1958 rate settlement, and in 1958 for retroactivity from Feb. 5, of the negotiated rate settlement offered in January, 1959.

Sources: Moody's Public Utility Manuals and Supplements; Standard & Poor's Corporation Descriptions; Company's Annual Report to the FPC (Form 2); Company's Annual Report to Stockholders.

(5907)

(2303)

El Paso Natural Gas Co. (Del.)

El Paso Natural Gas Co. (Del.) was incorporated in Delaware in 1[illegible]. The company and its 99.[illegible]% controlled Pacific Northwest Pipe Line Company form the largest natural gas pipeline system in the country. The combined 10,909 mile network fans out from the San Juan basin of New Mexico and West Texas to serve all of the far western states. Extensive allied interests include oil production, refining and marketing, exploration and development and the manufacture of petrochemicals.

El Paso acquired Pacific Northwest by an exchange of shares of its Common B Stock for the Common stock of Pacific Northwest, effective January 31, 1957. Beginning January 1, 1958, Common B stock automatically became Common stock without dividend restrictions. El Paso owns a 99.4% interest in Utah Natural Gas Co. which draws gas from the Clear Creek, Utah, field and delivers it to Mountain Fuel Supply Company. It also owns a 28% interest in Rare Metals Corporation of America, engaged in uranium mining, and, has a 14% ownership in Western Natural Gas Company.

The company purchases the bulk of its supply under long-term contracts with suppliers in the Permian and San Juan Basins, and in the Texas Panhandle. El Paso expects to benefit from the marketing of increasing quantities of gas expected to be available from Canadian sources through Pacific Northwest. Among the important utility customers are: Southern Counties Gas Company, Southern California Gas Company; Pacific Gas & Electric Co.; Arizona Public Service Co.; Natural Gas Service Co., Nevada Natural Gas Pipe Line Co.; Southern Union Gas Co. and Tucson Gas Electric Light & Power Co. The industrial customers include several prominent copper companies.

During 1958, 71% of El Paso's consolidated operating revenues of $368,300,000 was derived from sale of gas to other gas utilities, 5.2% was from sales to industrial customers, and the balance came from other sources, including sale of extractive products.

As of December 31, 1958, El Paso estimated its owned natural gas reserves at 9.1 trillion cubic feet, in addition to which it had about 20.0 trillion cubic feet available under contract.

COMMON STOCK - Outstanding December 31, 1958 - 17,022,583 Common Shs. ($3 par value).
Market - New York, Midwest and Pacific Coast exchanges.
Number of Common shareholders - 51,835.

Per Share of Common Stock 1/

Year (a)	Operating Revenue (Millions) (b)	Earnings (c)	Dividends (d)	Pay-Out % (e)	Market Price High (f)	Market Price Low (g)	Market Price Average (h)	Market Price Close (i)	Yield* % (j)	Year End Book Value (k)	Earnings Price Ratio # (l)
1945	$ 8.91	$0.58	$0.40	69.0	$ 8-1/8	$ 5-5/8	$ 6.88	$ 7-3/4	5.8	$ 3.39	9.0
1946	9.21	0.63	0.40	63.5	10-1/4	7-3/8	8.81	8-3/4	4.5	3.93	6.4
1947	11.71	0.87	0.40	46.0	10	7-3/4	8.88	9-7/8	4.5	4.34	7.9
1948	23.85	1.18	0.40	33.9	13-3/4	9-1/8	11.44	11-3/8	3.5	5.03	8.7
1949	29.44	0.96	0.60	62.5	14-1/2	11-7/8	13.19	13-7/8	4.5	5.55	6.8
1950	39.95	1.16	0.62	53.4	14-3/8	10-3/4	12.56	11-7/8	4.9	6.63	7.3
1951	63.55	1.53	0.80	52.3	19-1/8	11-7/8	15.50	18-1/2	5.2	8.82	9.0
1952	78.05	1.48	0.80	54.1	19-1/8	15-1/2	17.31	16-1/2	4.6	9.55	8.5
1953	111.14	1.75	0.80 2/	45.7	16-5/8	15	16.81	17-3/4	4.8	11.94	8.3
1954	143.84	0.95	1.00	105.3	20-7/8	17-5/8	19.25	20-3/4	5.2	12.17	7.2
1955	179.45	1.53	1.00	65.4	27-1/4	19-7/8	23.56	24	4.2	12.89	4.7
1956	221.52	2.11	1.07	50.7	31-1/2	21-1/2	26.50	31-1/8	4.0	14.66	6.8
1957	301.09	1.65	1.30	78.8	44-3/8	24	34.19	26-3/8	3.8	13.37	6.7
1958	368.30	1.61	1.30	80.7	39-1/4	27	33.13	36	3.9	14.11	5.9
1959			1.30		39	28	33.50	31-1/?	3.9		4.7

* Based on average price. # Average of 12-month-end earnings-price ratios.

1/ Adjusted for 2-for-1 stock split in 1951 and 3-for-1 split in 1949.
2/ Plus 1/90 share of Western Natural Gas Common Stock which at 3-24-53 had market value of approximately 21 cents.

Source: Moody's Public Utility Manual and Supplements; Company's Annual Report to Stockholders; Company's Annual Report to SEC (Form 2); Standard & Poor's Stock Guide and Corporation Descriptions.

[illegible] Mississippi [illegible] and the remaining 40 [illegible] in its service [illegible] supply natural gas from [illegible] and Louisiana fields [illegible] St. Louis area. [illegible] [illegible] about [illegible] miles of [illegible] [illegible] about [illegible] miles of [illegible] [illegible] [illegible]

[illegible] Paul, [illegible] Minneapolis, [illegible]

Northern has two active subsidiaries: Northern [illegible] and [illegible] Iowa for the purpose of [illegible] owned, Minnesota Northern's [illegible] Northern entitled system [illegible] million cubic feet controlled by [illegible] Indirect [illegible] cubic feet, controlled by [illegible]. Delivery facilities of the system include approximately [illegible] miles of pipeline and compressor stations having 54,[illegible] horsepower.

Through [illegible] Northern serves 117 communities and 8,900 customers at retail, through its complex natural gas [illegible] Principal sources of revenues are sales to other gas utilities and main line industrial gas sales. In 1958 sales of other gas utilities accounted for about 60% of gas sales by volume, and 38% of gas sales revenues. Industrial sales accounted for 13% of gas sales by volume and 11% of gas sales revenues.

Capitalization - Outstanding December 31, 1958 - 5,436,470 shares ($10 par value).
Number of stockholders - approximately 21,756.
Market - New York Stock Exchange, Midwest Stock Exchange.

Per Share of Common Stock 1/

Year (a)	Operating Revenues (Millions) (b)	Earnings (c)	Dividends (d)	Payout % (e)	Market Price: High (f)	Low (g)	Average (h)	Close (i)	Yields % (j)	Year End Book Value (k)	Earnings Price Ratio % (l)
1945	$17.16	$1.[illegible]	$0.63	[illegible]	$11-7/8	$ 8-5/8	$10.25	$11-5/8	6.1	$ 7.08	9.8
1946	19.27	1.34	0.75	56.0	14-1/8	11-1/8	12.63	14-1/4	5.8	7.79	9.8
1947	23.27	1.82	0.80	43.[illegible]	15-3/8	11-3/4	13.44	14-3/4	6.0	8.22	11.0
1948	26.85	1.56	0.90	57.7	18-1/8	13-1/8	15.50	18-1/8	5.8	9.31	9.9
1949	29.30	1.25	0.90	72.0	20	15-1/2	17.75	17-1/2	5.1	10.56	6.8
1950	33.18	1.07	0.90	84.1	24-7/8	14-1/2	17.20	18-5/8	5.3	11.23	7.8
1951 2/	37.27	1.32	.90	68.2	20	15-3/8	17.81	17-7/8	5.1	11.44	5.7
1952 2/	39.55	1.[illegible]	.90	62.8	19-5/8	14-5/8	17.63	19-1/4	4.8	12.24	4.0
1953 2/	43.33	1.[illegible]	.[illegible]	62.2	23-1/8	17-1/4	20.21	22-1/4	4.4	13.07	4.9
1954	50.[illegible]	1.[illegible]	.[illegible]	[illegible]	28-7/8	17	[illegible]/6	22-3/4	4.7	13.87	6.2
1955	100.[illegible]	2.87	1.[illegible]	55.[illegible]	30-1/8	20[illegible]	23.69	22-1/8	4.7	15.08	7.0
1956	[illegible].30	1.[illegible]	1.20	[illegible]	24-3/8	21-3/4	23.94	23	5.2	15.65	7.9
1957	118.[illegible]	1.[illegible]	1.[illegible]	[illegible]	24-1/4	16-3/4	20.[illegible]	24	5.0	16.34	7.0
1958	135.63	1.12	1.20	107.[illegible]	24-3/8	19-3/4	[illegible].08	24	5.0	17.17	5.2
1959			1.40		35-3/4	25	31.38	28-1/2	4.4		5.5

a Dates or average price.
b Average of 12 month-end years price ratios.

1/ Adjusted for 4-for-3 stock splits in [illegible] and 1958.
2/ Adjusted to reflect rate increases granted.

Sources: Moody's Public Utility Manuals and Cumulative Supplements, Standard & Poor's Stock Guide and Corporation Records; Annual reports to Stockholders and Annual Reports to SEC, Form 2.

(2306)

PANHANDLE EASTERN PIPE LINE COMPANY

Panhandle Eastern Pipe Line Company was incorporated in Delaware in 1929 as Interstate Pipe Line Co., the present title was adopted in 1930. The Company produces, purchases, transports and sells natural gas obtaining the greater portion of its supply from the Amarillo field in the Panhandle of Texas and the Kansas Hugoton fields, and selling it principally to other gas utilities in Kansas, Missouri, Illinois, Indiana, Ohio and Michigan. Panhandle's transmission system extends from its southwestern supply points as far north as Sarinaw, Michigan, a distance of approximately 1,300 miles. The line is looped almost its entire length and the system contains, all told, approximately 6,300 miles of various sizes of gathering, main and lateral lines. Trunkline Gas Co., 100% owned, owns and operates a supplementary supply line, about 1,400 miles long, which taps the Gulf Coast Fields of Louisiana and Texas, and connects with Panhandle's line at Tuscola, Illinois. In 1958 Panhandle produced about 22% of its gas intake and purchased the remainder. As of December 31, 1958, Panhandle estimated gas reserves, owned or controlled by itself and Trunkline, to be in excess of 12 trillion cubic feet.

About 88% of the gas transported is sold to other utilities for resale. Panhandle supplies about 60 utilities or municipalities distributing gas at retail and estimates that it is thus serving, indirectly, about 4,000,000 domestic customers. It also supplies directly about 5 industrial consumers. Panhandle owns a 25% interest in Michigan Gas Storage, which purchases gas from Panhandle and sells it to Consumers Power Co., owning the other 75%. In December 1957, Panhandle exchanged its 40% stock interest in National Petro Chemicals Corporation for 1,500,000 shares (14.3%) of National Distillers and Chemical Corporation common stock.

COMMON STOCK - Outstanding December 31, 1958 - 6,765,744 no par value shares.
Number of stockholders - approximately 13,000.
Market - New York Stock Exchange

		Per Share of Common Stock 1/									
Year (a)	Operating Revenue (Millions) (b)	Earnings (c)	Dividends (d)	Pay-Out % (e)	Market Price High (f)	Low (g)	Average (h)	Close (i)	Yield* % (j)	Year End Book Value (k)	Earnings Price Ratio #
1945	$ 24.00	$1.07	$0.50	46.7	$10	$ 6-7/8	$ 8.43	$ 9-5/8	5.9	$ 8.71	12.1
1946	27.68	1.10	0.62	56.4	14-1/8	9-3/8	11.75	11-3/8	5.3	9.99	9.4
1947	35.43	1.13	0.75	66.4	13-3/4	10-1/4	12.00	13-3/8	5.3	8.37	9.4
1948	34.15	1.18	0.75	63.6	16-1/2	11-1/2	14.00	12-5/8	5.4	8.45	9.3
1949	36.42	1.27 2/	0.81 2/	68.1	19-3/8	12-3/8	15.88	18-5/8	5.1	7.58	8.4
1950	41.37	1.33	1.00	75.2	24-7/8	17-1/4	21.06	20-7/8	4.7	7.71	6.3
1951	52.30	1.51	1.00	66.2	31	20	25.50	29-3/4	3.9	8.12	5.9
1952	91.82	2.50	1.25 2/	50.0	44-3/4	29-7/8	35.81	40-1/2	3.5	9.42	6.9
1953	95.14	2.47	1.25	50.6	44-3/8	34-1/4	39.31	35	3.2	10.96	6.3
1954	87.16	2.13	1.25	58.7	42-3/8	33-1/2	37.94	37-3/4	3.2	10.85	5.7
1955	98.80	2.50	1.44	57.6	44	35-1/4	39.63	39-1/8	3.6	11.29	6.3
1956	112.65	2.75	1.50	54.5	53-1/4	37	45.13	52-1/2	3.3	12.84	5.9
1957	117.14	2.74	1.80	65.7	56-1/2	36	46.25	37-1/4	3.9	14.10	5.8
1958	120.73	2.74	1.80	65.7	62-1/4	37	49.63	58-3/4	3.6	15.32	5.4
1959			1.80		59-1/4	43	51.13	47	3.5		6.4

* Based on average price. # Average of 12 month-end earnings-price ratios.

1/ Adjusted for 2-for-1 stock splits in 1945, 1949 and 1956.
2/ Plus Stock Dividend.
3/ Adjusted to $1.19 to reflect additional cost of gas resulting from orders of State Corporation Commissions of Kansas and Oklahoma.

Source: Moody's Public Utility Manual & Supplements; Standard & Poor's Stock Guide, Listed Stock Reports and Corporation Descriptions; Company's Annual Report to Stockholders; Company's Annual Report to FPC (Form 2);

(5904)

Southern Natural [illegible] in 1946, [illegible] Natural Gas Corporation, in [illegible] 1947. It owns and operates [illegible] gas which transports gas from producing fields in Louisiana, [illegible] Mississippi, Alabama, Georgia and South Carolina. In 1952 its [illegible], a former subsidiary, sold its properties to Mississippi Valley Gas Company and was liquidated. In 1955 Southern distributed its holding of Alabama Gas Corporation, [illegible] shareholders, [illegible] Southern Common stock. In 1955 Apex Gas Company sold all of its properties and was liquidated and dissolved. On November 1, 1956 Southern acquired a majority interest in the Offshore Company. Offshore is engaged in the business of drilling oil and gas wells under contract for others, specializing in operations on submerged lands off the Gulf Coast of the United States.

Physical facilities of Southern Natural include two main transmission lines, running approximately parallel one to the other, but about 50 miles apart. The North line extends from the Monroe field in northeast Louisiana, east about 460 miles to Atlanta, Georgia. The South line extends from fields in Mississippi and southeast Louisiana, east about 610 miles to Savannah, Georgia. The system as a whole comprises about 4,800 miles of pipe. Compressor stations have an aggregate installed capacity of 183,224 HP. In 1958 gas service revenues totaled $91,735,000; of this 74 percent represented sales of gas for resale, the balance represented direct industrial sales. Southern purchases about 92 percent of its gas requirements from producing companies and from United Gas Pipe Line Co. Southern estimates that the controlled gas reserves connected, or to be connected, to the system as of the end of 1958 were of the order of 7 trillion cubic feet.

COMMON STOCK - Outstanding December 31, 1958 - 4,950,485 shares ($7.50 par value).
Reserved for conversion of the convertible debenture 4-1/2s due 1973 - 52,700 shares.
Market - New York Stock Exchange.
Number of stockholders December 31, 1958 - 23,200.

Per Share of Common Stock 1/ 2/

Year (a)	Operating Revenue (Millions) (b)	Earnings (c)	Dividends (d)	Pay-Out % (e)	Market Price High (f)	Market Price Low (g)	Market Price Average (h)	Market Price Close (i)	Yield* % (j)	Year End Book Value (k)	Earnings Price Ratio # (l)
1945	$ 13.14	$1.22	$0.63	51.6	$12-3/8	$ 9-1/2	$10.44	$12 [illegible]	6.0	$ 8.78	9.4
1946	13.67	1.13	0.69	61.1	16-7/8	11-1/8	14.06	12-7/8	4.9	10.03	9.2
1947	14.27	1.14	0.75 3/	65.8	14	11	12.50	12	6.0	9.43	10.8
1948	17.89	1.42	0.88	62.0	15-1/8	10	12.56	14-5/8	7.0	9.92	10.7
1949	22.48	1.44	1.00	69.4	18-3/8	14-1/8	16.25	17-7/8	6.2	10.55	9.6
1950	27.14	1.72	1.00	62.8	20	15-1/4	17.63	18	6.1	11.54	9.7
1951	35.47	2.14	1.25	58.4	25-1/2	17-7/8	21.69	24-3/8	5.8	12.86	9.6
1952	39.43	1.97	1.33	67.5	30-1/2	23-7/8	27.19	29-3/8	4.9	14.02	8.4
1953	48.33	2.06	1.40 4/	68.0	33-3/4	23	28.38	29-1/4	4.9	12.89	8.2
1954	59.23	1.89	1.55	82.0	32-7/8	28-1/4	30.56	32	5.1	13.35	6.5
1955	69.33	2.37	1.65	69.6	36-5/8	31-1/8	33.88	34-3/4	4.9	16.10	7.2
1956	79.93	2.35	1.85	78.7	39-7/8	33-3/4	36.81	39-7/8	5.0	20.08	7.3
1957	101.15	2.35	2.00	85.1	49-1/4	29-1/2	39.38	32-1/4	5.1	21.79	6.9
1958	104.38	2.40 5/	2.00	83.3	44-1/4	33	38.63	42	5.2	22.47	6.9
1959			2.00		46-3/4	34-1/4	40.50	35-5/8	4.9		5.7

* Based on average price. # Average of 12 month-end earnings-price ratios.

1/ Consolidated; 1956 and prior years is for Company only.
2/ Adjusted for 2-for-1 stock split in 1952.
3/ Also dividend of 1/2 share of Southern Production Co. Inc. paid 7-28- [illegible], for each share of Southern Natural Gas Co. held. (Equivalent to one share before stock split in 1952).
4/ Also .2306 shares of common of Alabama Gas Corp. for each share of Southern Natural Gas Co.
5/ Includes $0.45 per share net profit on sale of securities.

Source: Moody's Public Utility Manual and Supplements; Company's Annual Report to Stockholder Company's Annual Report to the FPC (Form 2); Standard & Poor's Stock Reports, Stock Guide and Corporation Descriptions.

(5904)

1/ Adjusted for stock dividends of 20% in March, 1958, 33-1/3% in 1955, 20% in 1952, 25% in 1951 and 1949; 33-1/3% in 1948 and 7-for-1 split in 1946. Consolidated after 1949; reflects 1957 rate settlement after 1956; includes Middle States and Hartol Petroleum Corps. after 1956.

[illegible]

[illegible] Affiliated enterprises include [illegible] Texas Eastern Transmission Corporation, 1,000 miles, which taps gas fields in southwestern Texas and delivers gas to [illegible] Eastern at Leidy, Texas; Texas Eastern-Penn Jersey Transmission Corp., 1,000 miles, which links the eastern storage field with Texas Eastern's main line transmission system in Kentucky, West Virginia, and Pennsylvania, and other facilities, [illegible] Transmission Co., in which Texas Eastern has a [illegible] interest, which transports gas from Seminole and delivers it to distribution companies in New England. Texas Eastern Production Co., formerly a subsidiary, was merged in 19[illegible].

Texas Eastern purchases most of its gas from Texas and Louisiana producers and sells it to other gas utilities, including municipal systems. In 19[illegible] its largest customers were the [illegible] System, Consolidated Natural Gas System, Algonquin Gas Transmission Co., Texas Illinois Gas Division of [illegible], and Texas Gas Transmission Corporation. There were also [illegible] others.

COMMON STOCK - Outstanding December 31, 19[illegible] - [illegible] shares ($1 par value).
Reserved for conversion of the Convertible Preferred - [illegible] shs.
Market - Over-the-Counter.
Number of Common shareholders December 31, 19[illegible] - approximately [illegible].

Per Share Data and Stock

Year (a)	Operating revenue (millions) (b)	Earnings (c)	Dividends (d)	Payout (e)	Market price (f)				Yield (g)	Book value (h)	Earnings price ratio (i)
1947 2/	$ [illegible]	$1.[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	$ [illegible]	--
1948	3[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	--
1949	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	--
1950	73.87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]
1951	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1952	93.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1953	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1954	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1955	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1956	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1957	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1958	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1959	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		1.40	M-1/2	6-5/8	31.76	28	8	4.4	[illegible]	[illegible]	7.0

1/ Based on asked price. H - high. L - low. M - mid-point of bid-asked price. B - bid price.

2/ Eight months ended December 31.

3/ Restated to [illegible], 41.12, 31.63, [illegible] and [illegible] for the years 19[illegible], 1948, 1949, 1950 and 1951 respectively.

4/ Plus 6% interest for each system in [illegible].

Sources: Moody's Public Utility Manual and [illegible] Guide, [illegible] Stock Exchange [illegible]

Organized in 1945, Texas Gas Transmission Corporation owns and operates a pipeline system for the transportation and sale of natural gas. It acquired through merger to Memphis Natural Gas Company and Kentucky Natural Gas Corporation, its major predecessor enterprises which have been operating since 1926. Its present system reaches into the Carthage Gas Field in East Texas, and into the Monroe, Liston and other Louisiana fields, and extends northward, following the routes of the Mississippi and Ohio Rivers, as far as Middletown, Ohio. A branch follows the Wabash as far as Terre Haute, Indiana. A wholly-owned subsidiary, Texas Gas Exploration Corporation, explores for and develops oil and gas reserves. In 1955 two of Texas Northern Gas Co. and Louisiana Natural Gas Co., two subsidiaries which had previously operated field gathering systems. As of the end of 1958 the system consisted of 3,714 miles of pipeline, compressor stations having an aggregate installed capacity of 198,900 HP; and other operating facilities. Several depleted fields in Indiana and Kentucky have been developed for storage purposes.

Texas Gas purchases its gas from various suppliers, including its subsidiary and other pipelines. It sells this gas to about 70 other gas utilities, including distribution companies, municipalities and other pipeline companies, and to approximately 13 major industrial customers. In 1958 over 92 percent of gas service revenues of $100,520,914 represented sales to other gas utilities; the balance was derived from direct industrial sales.

At the end of 1958, Texas Gas estimated the gas reserves dedicated to it under its contracts with various suppliers at 0.4 trillion cubic feet.

COMMON STOCK - Outstanding December 31, 1958 - 2,929,833 - $5 par value shares.
Number of common stockholders - 16,993.
Market - New York, Midwest and Pacific Coast Stock Exchanges.

Note: Approximately 26 percent of the common stock is controlled, directly or indirectly, by Mr. J. H. Hillman, Jr., Chairman of the Board of Texas Gas, and members of his family.

Per Share of Common Stock 1/

Year (a)	Operating Revenue (Millions) (b)	Earnings (c)	Dividends (d)	Pay-Out % (e)	Market Price High (f)	Market Price Low (g)	Market Price Average (h)	Market Price Close (i)	Yield* % (j)	Year End Book Value (k)	Earnings Price Ratio* (l)
1948	$ 9.53	$0.60	—	—	$11-3/4	$ 7-5/8	$ 9.68	$10 B	—	$ 5.97	—
1949	9.98	0.73	—	—	14-3/4	9-3/8	13.06	14-3/4B	—	7.35	6.0
1950	30.86	1.77	—	—	17	12-1/4	14.62	14-1/2B	—	9.62	6.1
1951	43.39	1.63	—	—	16-3/4	14-1/2	15.62	15-1/2B	—	10.86	10.6
1952	47.45	1.03	$0.91	88.3	17-1/8	14-1/4	15.69	15 B	5.8	11.31	9.4
1953	63.33	1.47	0.91	61.9	15-5/8	13-1/4	13.44	15-1/4B	6.8	11.64	8.2
1954	68.16	1.54	0.92	59.7	20-3/8	15-5/8	18.00	18-1/4B	5.1	12.60	8.4
1955	77.13	1.67	0.94	56.3	23-3/4	19-1/8	21.44	21 B	4.4	13.56	7.2
1956	80.36	2.13	0.96	45.1	24	20-1/4	22.12	19-1/2B	4.3	14.60	8.8
1957 2/	94.30	1.83	0.98	53.6	23-1/2	16-1/4	19.88	16-1/4B	4.9	17.38	10.3
1958	104.16	2.06	1.00 3/	48.5	32	16-5/8	24.31	32 B	4.1	18.79	8.4
1957			1.25		35-1/4	27-1/8	31.19	29-3/4	4.0		6.3

* Based on average price. B - Bid price.
# Average of 12 month-end earnings-price ratios.

1/ Adjusted for stock dividends of 2% each in 1953 through 1958.
2/ Restated to reflect rate settlement in 1958.
3/ Plus 2% in stock.

Source: Moody's Public Utility Manual and Supplements, Standard's Over-the-Counter Stock Reports, F.P.C. Form No. 2 and Annual Report to Stockholders.

(5906)

Transcontinental Gas Pipe Line Corporation was incorporated in Delaware in 1 . . . succeeding Trans-Continental Gas Pipe Line Co., Inc., a Texas corporation, existing since . . . company owns and operates a system for the transportation of natural gas extending from the Gulf Coast regions of Texas and Louisiana in a northeasterly direction as far as the New York City metropolitan area. Operations commenced March 1, 1951. The physical facilities include over 5,300 miles of pipeline of which over 3,200 miles are 30 inch diameter pipe, or over; compressor stations with an aggregate rated capacity of approximately 474,420 HP, and other operating appurtenances. The company has access to the Oakford Storage Field, near Pittsburgh, Pa.

Gas is purchased under long-term contracts with numerous field suppliers and sold at wholesale mainly to gas distributing utilities in New York City and on Long Island, New Jersey, eastern Pennsylvania and at various points along the line in Alabama, Georgia, the Carolinas, Virginia and Maryland. During 1958 over 94% of operating revenues of $115,470,000 represented sales to other gas utilities; the larger of such purchasers were: Consolidated Edison Co. of New York, Inc., Public Service Electric and Gas Co., serving New Jersey, and Brooklyn Union Gas Company. A few industrial consumers are supplied directly. Natural gas reserves dedicated to Transcontinental under its contracts with its suppliers were estimated by Transcontinental at 7.8 trillion cubic feet as of December 31, 1958.

COMMON STOCK - Outstanding December 31, 1958 - 9,953,842 shares ($5 par value).
Market - Over-the-Counter.
Number of Common stockholders - 39,504

		Per Share of Common Stock 1/									
Year (a)	Operating Revenue (Millions) (b)	Earnings (c)	Dividends (d)	Pay-Out % (e)	Market Price High (f)	Market Price Low (g)	Market Price Average (h)	Market Price Close (i)	Yield* % (j)	Year End Book Value (k)	Earnings Price Ratio # (l)
1949	-	-	-	-	$ 9	$ 5-3/4	$ 7.38	$ 8-5/8B	-	$ 3.56	-
1950	-	-	-	-	10-3/8	7-1/4	8.81	8-1/4B	-	4.03	-
1951	$ 39.30	$0.62 2/	-	-	10-7/8	7-3/4	9.31	8-5/8B	-	5.16	-
1952	51.80	0.56 3/	$0.16	28.6	10-1/2	8-1/2	9.50	10-1/8B	1.7	6.14	6.2
1953	59.03	0.82	0.64	78.0	10-3/4	8-3/4	9.75	10-1/8B	6.6	6.22	6.5
1954	62.38	0.92	0.64	69.6	12-3/8	10-1/8	11.25	12-1/4B	5.7	6.03	8.1
1955	74.69	1.05	0.64	61.0	17-5/8	12-1/8	14.88	16-3/4B	4.3	6.51	6.7
1956	88.33	1.20	0.84	70.0	17-1/4	14-3/4	16.00	15-3/4B	5.3	7.31	6.9
1957	96.80	1.36	0.91	66.9	18-7/8	15-3/4	17.31	16-1/8B	5.3	8.92	8.0
1958	115.47	1.40	1.00	71.4	24-7/8	16-5/8	20.75	24-3/4B	4.8	10.49	6.9
1959			1.00 4/		26-1/2	21-1/4	23.88	21-7/8B	4.2		6.2

* Based on average price. B- Bid price.
\# Average of 12 month-end earnings-price ratios.

1/ Adjusted for 2-for-1 split in 1956 and 10% stock dividend in 1957.

2/ After deducting $0.66 per share for charge in lieu of tax.

3/ After deducting $0.61 per share for charge in lieu of tax.

4/ Plus 20% in stock.

Source: Moody's Public Utility Manual and Supplements; Standard & Poor's Stock Guide, Stock Reports and Corporation Descriptions; Company's Annual Report to Stockholders; Company's Annual Report to the FPC (Form 2).

(5904)

TEN COMPANIES - 1945 to 1958 1/

Year	AMOUNT Long-Term Debt (000)	Preferred Stock (000)	Common Equity (000)	Total (000)	PERCENT Long-Term Debt	Preferred Stock	Common Equity
1945	$ 154,183	$ 24,682	$116,706	$ 295,571	52	8	40
1946	200,215	33,214	139,476	372,905	54	9	37
1947	403,171	45,401	188,741	637,313	63	7	30
1948	605,134	47,190	236,456	888,780	68	5	27
1949	853,373	90,092	337,941	1,281,406	67	7	26
1950	1,013,187	135,885	401,466	1,550,538	65	9	26
1951	1,218,010	166,212	477,058	1,861,280	65	9	26
1952	1,390,275	227,812	533,905	2,151,992	65	10	25
1953	1,606,454	278,417	639,196	2,524,067	64	11	25
1954	1,837,174	316,076	721,566	2,874,816	64	11	25
1955	1,962,324	341,312	802,743	3,106,379	63	11	26
1956	2,135,509	352,621	912,298	3,390,428	63	10	27
1957	2,903,615	521,303	1,054,677	4,479,625	65	11	24
1958	3,209,059	592,975	1,207,974	5,010,008	64	12	24

1/ Includes El Paso Natural Gas Co., Northern Natural Gas Co., Panhandle Eastern Pipe Line Co., Southern Natural Gas Co. and Tennessee Gas Transmission Co. from 1945; Texas Eastern Transmission Corp. and Texas Gas Transmission Co. from 1947; Colorado Interstate Gas Co. from 1948; Mississippi River Fuel Corp. and Transcontinental Gas P. L. Corp. from 1949. Data is as of December 31.

TEN COMPANIES - December 31, 1958

Company	Long-Term Debt Amount (000)	Long-Term Debt Percent	Preferred Stock Amount (000)	Preferred Stock Percent	Common Stock and Surplus Amount (000)	Common Stock and Surplus Percent	Total Amount (000)
Colorado Interstate Gas Co.	$ 82,651 1/ 2/	65.95	$ 11,000	8.78	$ 31,669	25.27	$ 125,320
El Paso Natural Gas Co.	882,385 2/	68.67	164,076	12.77	238,557	18.56	1,285,018
Miss. River Fuel Corp.	60,450	51.20	--	--	57,623	48.80	118,073
Northern Natural Gas Co.	235,872 2/	56.57	42,868	10.28	138,246	33.15	416,986
Panhandle East. P. L. Co.	154,002 2/	60.02	10,412	4.06	92,153	35.92	256,567
Southern Natural Gas Co.	163,151 2/	61.97	--	--	100,103	38.03	263,254
Tennessee Gas Transm. Co.	678,962 2/	61.29	175,650	15.86	253,069	22.85	1,107,681
Texas East. Transm. Corp.	503,632 2/	66.01	108,381	14.21	150,936	19.78	762,949
Texas Gas Transm. Co.	105,822 2/	62.36	15,200	8.96	48,682	28.68	169,704
Transco Gas P. L. Corp.	342,132 2/	67.82	65,388	12.96	96,936	19.22	504,456
Total	$3,209,059	64.05	$592,975	11.84	$1,207,974	24.11	$5,010,008

1/ Includes $40,000,000 bank loans.

2/ Includes Reserve for Deferred Federal Income Tax for:

Colorado Interstate Gas Co.	$ 95,000	Tennessee Gas Transm. Co.	$11,983,000
El Paso Natural Gas Co.	14,878,000	Texas East. Transm. Corp.	18,218,000
Northern Natural Gas Co.	7,000,800	Texas Gas Transm. Co.	7,852,185
Panhandle East. P. L. Co.	9,386,763	Transco Gas P. L. Corp.	10,915,501
Southern Natural Gas Co.	13,821,000		

Source: Moody's Public Utility Manuals and Supplements.

(5807)

CAPITAL PARTS OF THE PRINCIPAL NATURAL GAS PIPELINE COMPANY 1945 TO DATE

	Long-Term Debt	Pfd. Stock	Common Equity	Long-Term Debt	Pfd. Stock	Common Equity	Long-Term Debt	Pfd. Stock	Common Equity	Long-Term Debt	Pfd. Stock	Common Equity
	Colo. Int. Gas Co. 1/			El Paso Natural Gas Co.			Miss River Fuel Corp.			Northern Nat. Gas Co.		
1945	-	-	-	46	6	48	-	-	-	46	-	54
1946	-	-	-	65	11	24	-	-	-	44	-	56
1947	-	-	-	69	11	20	-	-	-	50	-	50
1948	51	8	41	78	7	15	-	-	-	52	-	48
1949	60	6	34	78	9	13	58	-	42	44	-	56
1950	57	6	37	78	9	13	44	-	56	56	-	44
1951	54	4	42	67	12	21	57	-	43	56	-	44
1952	62	-	38	67	14	19	56	-	44	55	-	45
1953	53	-	47	65	13	22	54	-	46	55	10	35
1954	59	12	29	64	14	22	46	-	54	59	9	32
1955	54	11	35	64	13	23	48	-	52	57	9	34
1956	48	11	41	64	13	23	50	-	50	54	9	37
1957	68 2/	9	23	68 2/	12	20	51	-	49	58 2/	12	30
1958	66 2/	9	25	69 2/	13	18	51	-	49	57 2/	10	33
1959												
	Panhandle E.P.L. Co.			Southern Nat. Gas Co.			Tenn. Gas Trans. Co.			Texas East. Trans. Corp.		
1945	48	14	38	42	3 3/	55	72	11	16	-	-	-
1946	49	14	37	48	3 3/	49	61	12	27	-	-	-
1947	52	12	36	54	3 3/	43	66	15	19	79	-	21
1948	58	10	32	60	2 3/	38	65	12	23	79	-	21
1949	56	10	34	55	2 3/	43	65	12	23	76	-	24
1950	64	8	28	52	2 3/	46	61	16	23	64	10	26
1951	66	7	27	57	1 3/	42	67	14	19	72	7	21
1952	62	6	32	57	-	43	65	15	20	66	16	18
1953	58	6	36	70	-	30	66	13	21	65	16	19
1954	62	5	33	71	-	29	67	13	20	65	13	22
1955	63 2/	5	32	69 2/	-	31	65	13	22	65	12	23
1956	61 2/	5	34	56 2/	-	44	68	11	21	63	13	24
1957	58 2/	5	37	56 2/	-	44	65 2/	16	19	67 2/	13	20
1958	60 2/	4	36	62 2/	-	38	61 2/	16	23	66 2/	14	20
1959												
	Texas Gas Trans. Co.			Transco. Gas P. L. Corp.								
1945	-	-	-	-	-	-						
1946	-	-	-	-	-	-						
1947	31 4/	-	69 4/	-	-	-						
1948	77	-	23	-	-	-						
1949	76	-	24	71	13 5/	16						
1950	73	-	27	74	12 5/	14						
1951	62	10	28	71	12	17						
1952	69	7	24	70	11	19						
1953	67	7	26	68	11	21						
1954	59	13	28	68	11	21						
1955	62	11	27	65	16	19						
1956	60	11	29	69	13	18						
1957	64 2/	9	27	69 2/	12	19						
1958	62 2/	9	29	68 2/	13	19						
1959												

1/ For company only, 1948 to 1950 incl.; combined balance sheet of Colorado Interstate Gas Co. and Canadian River Gas Co. for 1951.

2/ Includes Reserve for Deferred Federal Income Tax.

3/ Preferred stock represents minority interest in the subsidiaries.

4/ Giving effect as of 12-31-47 to the transactions which were consummated in the merger of 3-31-48.

5/ 6% Interim Notes due and payable 5-1-51 in preferred stock.

Source: Moody's Public Utility Manuals and Supplements

(2314)

CAPITAL RATIOS OF MAJOR NATURAL GAS PIPELINE COMPANIES 1/

1945 To Date

	Long-Term Debt	Preferred Stock	Common Equity
1945	39.7	4.9	55.4
1946	40.5	4.9	54.6
1947	52.0	4.7	43.3
1948	55.7	3.4	40.9
1949	59.3	3.5	37.2
1950	60.0	4.9	35.2
1951	62.4	5.7	31.9
1952	62.0	7.1	30.9
1953	61.7	7.3	31.0
1954	61.6	7.7	30.7
1955	60.2	7.8	32.0
1956	59.6	8.4	32.0
1957	61.6	8.7	29.7
1958	60.9	9.5	29.6

1/ Represented by 41 pipelines which include, in general, companies having transmission line mileage in excess of 250 miles and sales for resale in excess of 50 percent of total sales. Also included are certain natural gas storage companies and companies which although not meeting the foregoing criteria entirely, have the essential characteristics of pipeline companies.

Source: "Statistics of Natural Gas Companies" (FPC Publication)

EARNINGS-PRICE RATIO [illegible]

[illegible] - 1940 - 1957

	1940	1941	1942	1943	1944	1945	1946	1947	1948
January	10.7	11.6	13.7	12.4	11.6	9.4	6.6	7.6	9.1
February	9.9	12.3	13.7	11.4	11.3	9.1	7.2	7.8	9.6
March	11.0	12.4	15.0	11.6	10.6	9.4	6.8	8.3	9.2
April	10.7	13.6	14.1	11.3	10.7	9.1	6.7	8.4	8.7
May	10.4	13.1	14.2	10.5	10.6	9.3	6.6	9.2	8.2
June	11.3	12.7	14.3	10.6	11.6	8.7	6.9	9.2	8.4
July	13.3	11.5	15.7	10.3	10.7	8.9	7.1	8.9	8.5
August	13.3	11.5	15.1	10.3	10.3	8.8	7.6	9.4	8.4
September	13.0	11.5	14.8	10.1	12.1	8.7	8.1	9.2	8.7
October	12.3	11.9	14.6	10.1	10.0	8.0	8.0	8.9	8.6
November	11.9	14.2	13.8	10.6	10.3	7.8	8.1	9.0	9.8
December	11.9	15.6	13.5	10.6	10.9	7.4	7.9	9.0	9.3
Straight Average	11.7	12.7	14.8	10.9	10.8	8.7	7.3	8.7	9.0

	1949	1950	1951	1952	1953	1954	1955	1956	1957
January	8.9	6.9	7.4	6.2	5.9	6.9	6.0	6.4	6.2
February	9.2	6.8	7.3	6.4	6.3	6.8	5.8	6.8	6.5
March	8.8	6.7	7.3	6.0	6.5	6.8	5.4	6.7	6.2
April	9.1	6.9	7.4	6.3	7.0	7.0	5.3	6.9	5.9
May	9.1	6.7	7.6	6.2	7.0	7.0	5.5	7.1	5.7
June	9.3	7.2	7.6	6.2	7.3	6.9	5.5	7.2	5.7
July	9.1	8.1	8.7	6.0	7.1	6.8	5.7	6.5	6.0
August	8.5	8.0	6.6	6.3	7.6	6.4	6.0	6.8	6.9
September	8.3	7.7	6.5	6.6	7.7	6.4	6.4	7.0	7.3
October	7.6	7.9	6.4	6.4	7.1	6.8	6.3	6.7	7.3
November	7.3	8.0	6.6	6.2	7.0	6.2	6.4	6.9	7.0
December	6.8	7.9	6.4	6.0	7.1	6.1	6.4	6.4	7.8
Straight Average	8.5	7.1	7.0	6.2	7.0	6.7	5.9	6.8	6.5

UNLISTED STOCKS - 1940 - 1957

	1940	1950	1951	1952	1953	1954	1955	1956	1957
January	7.6	6.3	7.8	7.8	7.1	6.4	6.0	6.2	7.1
February	7.1	6.0	8.0	7.8	6.9	6.5	5.8	6.8	6.9
March	7.3	6.0	8.4	7.3	6.5	6.9	6.0	6.7	6.9
April	7.0	6.3	8.9	7.1	6.8	6.6	5.9	7.3	6.5
May	7.5	6.4	10.0	6.8	6.9	6.6	6.0	7.7	6.7
June	8.8	7.4	10.0	7.4	7.3	6.8	5.8	7.5	7.0
July	8.5	9.0	9.5	7.3	8.9	6.7	5.8	7.0	6.8
August	8.3	8.7	8.7	6.8	6.6	6.6	5.9	7.2	7.4
September	7.5	8.1	8.8	7.9	7.0	6.3	5.8	7.7	7.8
October	7.7	7.9	9.1	8.0	6.9	6.5	5.8	7.5	8.7
November	7.0	8.7	9.9	7.0	6.8	6.8	5.7	7.7	8.8
December	6.4	8.3	8.3	6.8	6.7	6.4	6.0	7.5	9.1
Straight Average	7.6	7.4	8.9	7.3	6.8	6.6	5.9	7.2	7.5

Note: For the identities of the stocks represented in these calculations see the following page.

[illegible]

[illegible]

	1953	1954	1955	1956	1957	1958	1959	1960	1961
January	6.5	6.7	5.9	6.2	6.5	7.4	5.1	6.0	
February	6.6	6.8	5.8	6.7	6.5	7.6	5.2		
March	6.6	7.0	5.7	6.4	6.4	7.6	5.2		
April	6.	6.9	5.4	7.1	6.8	7.0	5.5		
May	6.6	6.9	5.6	7.5	5.6	6.4	5.5		
June	7.3	6.4	5.5	7.2	6.1	6.2	5.7		
July	7.0	6.8	5.7	6.6	6.2	6.1	5.4		
August	7.3	6.6	5.8	6.9	7.0	6.1	5.5		
September	7.5	6.4	6.0	7.2	7.4	6.0	6.0		
October	7.0	6.7	5.8	7.0	7.7	5.9	5.9		
November	7.0	6.4	5.9	7.2	7.7	5.7	6.0		
December	7.0	6.2	6.0	6.8	8.3	5.2	5.8		
Straight Average	7.0	6.7	5.7	6.9	6.8	6.4	5.6		

COMMON STOCKS INCLUDED IN EACH SERIES

Listed Series (1940 - 1957)	Unlisted Series (1949 - 1957)	New Series (1953 to date)
Consolidated Gas Utilities Co.	Colorado Interstate Gas Co. (Incl. since 1953)	Colorado Interstate Gas Co.
El Paso Natural Gas Company	Tennessee Gas Transmission Co.	El Paso Natural Gas Co.
Lone Star Gas Company	Texas Eastern Transmission Corp. (Incl. since March 1949)	Mississippi River Fuel Corp.
Mississippi River Fuel Corp. (Incl. since 1952)	Texas Gas Transmission Corp.	Northern Natural Gas Co.
Mountain Fuel Supply Company	Texas-Illinois Natural Gas Pipeline Co. (Incl. since 1954)	Panhandle Eastern Pipeline Co.
Northern Natural Gas Company	Transcontinental Gas Pipe Line Corp. (Incl. since 1953)	Southern Natural Gas Co.
Panhandle Eastern Pipe Line Co.		Tenn. Gas Transmission Co.
Southern Natural Gas Company		Texas Eastern Transmission Corp.
		Texas Gas Transmission Corp.
		Transcontinental Gas Pipe Line Corporation

Note:

The Earnings-Price Ratios (E-PR's) shown in these tables are composites calculated from the final market prices for the shares of each of the several companies as of the end of each month, and the latest statement of earnings per share on a "12 months ended" basis available as of that time.

For an example of the manner in which such composites are calculated see later pages of this study.

The Straight Average EPR for each year is the arithmetic average of the 12 monthly EPR's of that year.

38

EARNINGS-PRICE RATIOS, YIELDS AND PAYOUTS ON
THE TEN PRINCIPAL NATURAL GAS PIPE LINE
COMPANY COMMON STOCKS

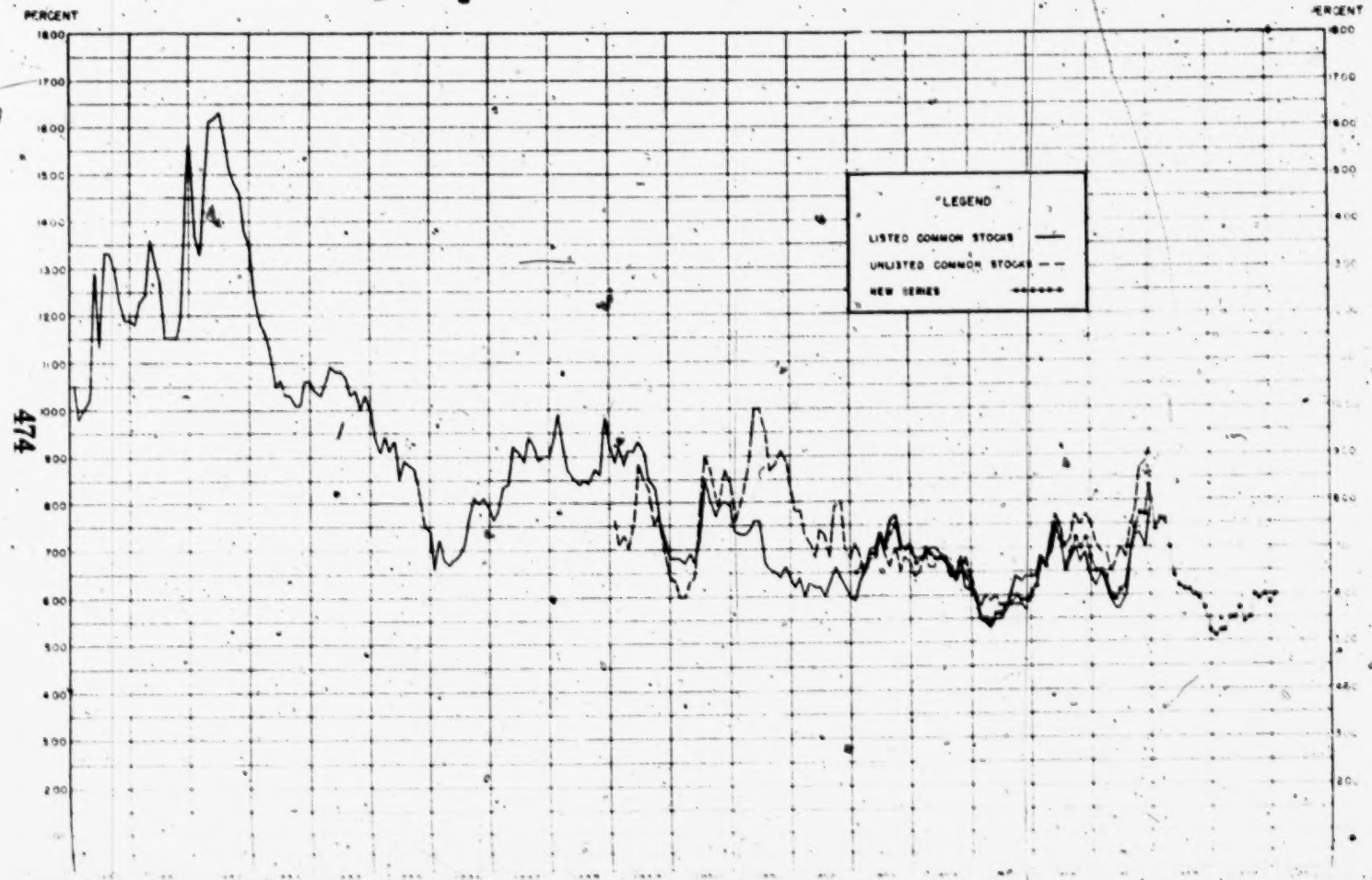
JANUARY 31, 1960

	No. Shares Outstanding (000)	Market Price Jan. 29 1960	Market Price Total (000)	Earnings 12 Mos. Ended 1959	Earnings Per Share	Earnings Total (000)	E/P Ratio	Dividend Rate	Yield	Pay Out
Colorado Int. Gas Co.	1,759	$47.75	$ 83,997	9-30	$2.88	$ 5,066	6.0	$1.25	2.6%	43.4
El Paso Natural Gas Co.	17,029	28.88	491,798	9-30	1.48	25,203	5.1	1.30	4.5	87.8
Miss. River Fuel Corp.	3,584	32.25	115,584	9-30	2.59	9,283	8.0	1.60	5.0	61.8
Northern Natural Gas Co.	8,265	27.88	230,428	9-30	1.85	15,290	6.6	1.40	5.0	75.7
Panhandle East. P.L. Co.	6,766	43.50	294,321	9-30	3.33	22,531	7.7	1.80	4.1	54.1
Southern Nat. Gas Co.	4,959	36.25	179,764	9-30	1.86	9,224	5.1	2.00	5.5	107.5
Tenn. Gas Transm. Co.	23,253	34.75	808,042	11-30	1.84	42,786	5.3	1.40	4.0	76.1
Texas East. Transm. Corp.	8,888	28.00	248,864	9-30	1.97	17,509	7.0	1.40	5.0	71.1
Texas Gas Transm. Corp.	2,950	30.75	90,713	9-30	2.25	6,638	7.3	1.40	4.6	62.2
Transco. Gas P. L. Corp.	11,950	21.13	252,504	9-30	1.25	14,938	5.9	1.00	4.7	80.0
Total			$2,796,010			$168,468				

Composite ratio $\frac{168,468}{2,796,010} \times 100 = 6.0$

Source: Standard & Poor's Stock Guide - February 1960

EARNINGS - PRICE RATIOS - LISTED AND UNLISTED NATURAL GAS COMPANY COMMON STOCKS



(2318)

474

(2319)

Hearing Exhibit No. 22
Filed with Exrs. Certification
dated JUN 23 1960

EXHIBIT NO. _____
DOCKET NO. G-19983
WITNESS F. I. Shaffer

Return Earned on Average Book Value of the Common Shares

10 Natural Gas Pipe Line Companies

Company	1951	1952	1953	1954	1955	1956	1957	1958
Colorado Interstate Gas Co.	- %	11.0%	10.4%	9.8%	9.8%	10.3%	12.9%	12.8%
El Paso Natural Gas Co.	19.8	16.1	16.3	7.9	12.2	15.3	11.6	11.7
Mississippi River Fuel Corp.	14.5	15.0	12.5	13.5	14.8	15.9	13.1	12.5
Northern Natural Gas Co.	11.6	12.0	8.8	10.2	10.8	11.6	11.7	9.5
Panhandle Eastern Pipe-line Co.	19.1	28.5	24.2	19.5	22.6	22.8	20.3	18.6
Southern Natural Gas Co.	17.5	14.7	15.3	14.1	15.8	13.0	11.2	10.8
Tennessee Gas Transmis-sion Co.	14.4	17.6	13.9	13.5	16.5	16.2	16.2	15.5
Texas Eastern Transmis-sion Corp.	16.1	9.7	11.1	12.9	14.1	12.4	14.7	13.2
Texas Gas Transmission Corp.	15.9	9.3	12.8	12.7	12.8	15.1	11.4	11.4
Transcontinental Gas Pipeline Corp.	13.5	9.9	13.3	15.0	16.7	17.4	16.7	14.4
AVERAGE - All Ten Companies	15.8%	14.4%	13.9%	12.9%	14.6%	15.0%	14.0%	13.0%
AVERAGE - Excluding Tennessee Gas Transmis-sion Co.	16.0	14.0	13.9	12.8	14.4	14.9	13.8	12.8

FEDERAL POWER COMMISSION
Docket No. G19983
Hearing Ex. No. 22
Date Identified APR 7 1960
Date Admitted APR 11 1960

(2320)

Hearing Exhibit No. 23

Filed with Exrs. Certification dated JUN 23 1960

EXHIBIT NO. 23
DOCKET NO. G-19983
WITNESS FEDERAL POWER COMMISSION

G19983

Docket No. _____
Hearing Ex. No. 23
Date Identified APR 7 1960
Date Admitted APR _____

TENNESSEE GAS TRANSMISSION COMPANY
EARNINGS - PRICE RATIOS
1950 - 1959

	1950	1951	1952	1953	1954
January	6.0	6.2	6.3	7.4	6.9
February	5.2	6.7	6.3	7.3	6.9
March	5.3	7.2	5.6	7.4	7.2
April	5.5	7.4	5.5	8.1	6.9
May	5.5	8.4	5.7	7.8	6.4
June	6.5	8.7	6.5	8.5	6.8
July	7.3	8.0	6.6	7.9	6.8
August	7.3	7.4	5.8	7.3	6.8
September	6.1	7.4	6.6	7.8	6.2
October	6.3	8.0	6.6	7.3	6.5
November	8.0	7.2	6.5	7.3	6.5
December	6.8	6.5	6.2	7.3	6.0
Average	6.3	7.4 7.42	6.2	7.6	6.7

	1955	1956	1957	1958	1959
January	5.8	5.3	6.2	6.5	4.8
February	5.6	5.9	5.9	6.0	5.0
March	5.6	5.9	6.0	6.1	5.0
April	5.5	6.2	5.5	6.3	5.4
May	5.2	6.6	5.4	7.1	4.7
June	5.2	6.5	5.8	6.9	4.9
July	5.1	5.8	5.6	6.6	4.5
August	5.1	6.1	5.9	6.6	4.9
September	5.0	6.7	6.4	6.3	5.5
October	4.9	6.5	7.1	6.1	5.2
November	4.6	6.9	7.1	5.7	5.3
December	4.9	6.9	7.0	4.9	5.2
Average	5.2	6.3	6.2	6.4	5.0

Based on closing prices as of the end of each month and the latest available 12 months earnings as of that date.

Source: Standard & Poor's Stock Guide.

(6003)

Hearing Exhibit No. 25

2323

Sheet 2 of 5 sheets

TENNESSEE GAS TRANSMISSION COMPANY

COMPARISON OF MINIMUM BILL REVENUES WITH TOTAL REVENUES FROM JURISDICTIONAL PIPELINE SALES AND TRANSPORTATION OF NATURAL GAS UNDER TARIFF RATE SCHEDULES

1. Total Revenues Under Tariff Rate Schedules	$289,093,834[1]
2. Revenue Under Minimum Bill Provisions of Tariff Rate Schedules	200,825,137[2]
3. Percent Minimum Bill Revenue is to Total Revenue	69.5%

[1] Data from Exh. 5, Schedule A, Column (7), line 7 plus line 17.

[2] Summary of minimum bill provisions of rate schedules contained in tariff is shown on Sheets 2 through 5 hereof. The rates utilized in the computation are the rates specified in the suspended tariff sheets except where otherwise indicated. The billing quantities utilized for sales under the CD, G and T rate schedules are based on billing demands shown in Statement G-2 of the rate increase application. The billing quantities utilized for sales under SO rate schedules are based on actual deliveries. The minimum bill under the SS-5 rate schedule is based only on billing demands and does not include a minimum commodity charge since such minimum commodity charge is included under the CD-5 rate schedules. Minimum bill under the T-2 rate schedule reflects only three months of service. Minimum bill under the PS-G rate schedule is based on contract quantity.

TENNESSEE GAS TRANSMISSION COMPANY

MINIMUM BILL PROVISIONS IN TARIFF RATE SCHEDULES FOR SALES AND TRANSPORTATION FROM PIPE LINE SYSTEM

RATE SCHEDULES CD-1, CD-2, CD-3, CD-4, CD-5 and CD-6
MINIMUM BILL:

The minimum monthly bill shall consist of the demand charge plus a minimum commodity charge consisting of a sum equal to 22.6¢ [1] multiplied by the number of days in said month, multiplied by 66-2/3% of the contracted demand; provided, however, that the minimum commodity charge shall not be applicable during those months for which Seller agrees in writing to such daily reductions below 66-2/3% of Buyer's contracted demand as can best be utilized by Seller, consistent with the most efficient and economic operation of its pipeline system, to make gas available for storage.

RATE SCHEDULES G-1, G-2, G-3, G-4, G-5 and G-6
MINIMUM BILL

The minimum monthly bill shall consist of the demand charge.

RATE SCHEDULES GS-1, GS-2, GS-3, GS-4, G-5 and GS-6
MINIMUM BILL—None

RATE SCHEDULES E-1, E-2, E-3, E-4, E-5 and E-6
MINIMUM BILL—None

---

[1] 22.6¢ per Mcf in Zone 1
25.5¢ per Mcf in Zone 2
26.9¢ per Mcf in Zone 3
29.1¢ per Mcf in Zone 4
32.6¢ per Mcf in Zone 5
36.1¢ per Mcf in Zone 6

2325

Sheet 3 of 5 sheets

RATE SCHEDULES R-1, R-2, R-3, R-4, R-5 and R-6
MINIMUM BILL—None

RATE SCHEDULES SR-1, SR-2, SR-3, SR-4, SR-5 and SR-6
MINIMUM BILL—None

RATE SCHEDULES SO-3, SO-4 and SO-5
MINIMUM BILL

For each month Buyer shall pay a minimum amount for service rendered under this Rate Schedule equal to 36.6¢[2] per Mcf multiplied by the aggregate daily volumes of gas tendered for delivery hereunder by Seller during such month, exclusive of any deficit gas, whether accepted for delivery by Buyer or not; provided, that in case where Buyer has a contracted demand contract with Seller, in the event that Buyer shall at any time reduce the quantity of gas taken by Buyer in Seller's Eastern Zone [3] Buyer shall have the right, during the time such reduction remains in effect, to refuse to take or pay for the percentage of the volume of gas tendered on any day by Seller to Buyer under this Rate Schedule which is obtained by dividing the amount of the daily reduction in the quantity of gas taken by Buyer in said Zone under said contracted demand contracts by the total of the contracted demands

2326

Sheet 4 of 5 sheets

specified in said contracts for delivery in said Zone; provided, further, that in no event shall Buyer have the right

[2] 36.6¢ per Mcf in Rate Schedule SO-3
40.2¢ per Mcf in Rate ScheduleSO-4
45.4¢ per Mcf in Rate Schedule SO-5

[3] Applicable to Rate Schedule SO-3. For Rate Schedule SO-4 read Northern Zone and for Rate Schedule SO-5 read New York Zone.

to refuse to take or pay for more than 33-1/3% of the volume of gas tendered on any day by Seller to Buyer under this Rate Schedule. The volume so refused by Buyer shall be excluded from the computation of the minimum bill.

RATE SCHEDULE SS-5

MINIMUM BILL

The minimum monthly bill shall consist of the demand charge; provided, however, that the minimum annual bill shall consist of the sum of (a) twelve times the demand charge, and (b) a total commodity charge equal to 32.6¢ times the Winter Storage Quantity less 24.7¢ times the difference ebtween (1) the Winter Storage Quantity, and (2) the volume of storage service gas actually delivered to Buyer by Seller during the Wtihdrawal Period up to the Winter Storage Quantity. For the purpose of this minimum bill provision, the word "annual" shall mean the twelve-month period ending on October 31 each year and the Winter Storage Quantity shall be ninety times the Daily Storage Quantity without adjustment as provided in Section 5 hereof. Any payment due Seller on October 1 under this minimum bill provision shall be included in Seller's November billing to Buyer.

RATE SCHEDULE T-1

MINIMUM BILL

The monthly bill shall consist of the demand charge plus a minimum volume charge consisting of a sum equal to the aggregate

of 10.7¢ multiplied by the number of days in said month. multiplied by 66-2/3% of the specified maximum contract quantity.

RATE SCHEDULE T-2 [1]
MINIMUM BILL

The minimum monthly bill shall consist of the demand charge.

RATE SCHEDULE T-3 and T-4
MINIMUM BILL

The minimum monthly bill shall consist of the demand charge plus a minimum volume charge consisting of a sum equal to the aggregate of,

(1) 8.5¢ multiplied by the number of days in said month, multiplied by 66-2/3% of the specified contract quantity for said Eastern Rate Zone; plus

(2) 10.7¢ multiplied by the number of days in said month, multiplied by 66-2/3% of the specified contract quantity for said Northern Rate Zone.

RATE SCHEDULE PS-G [2]
MINIMUM BILL

The minimum bill shall be the product of the Peak Service Maximum Contract Quantity and $12.00. Any payment due Seller on April 30th under this minimum bill provision shall be included in Seller's billing to Buyer for deliveries during April.

---

[1] As contained on First Revised Sheet No. 36 of Tennessee's FPC Gas Tariff, Fourth Revised Volume No. 2, in effect subject to refund in Docket No. G-11980.

[2] As contained on Original Sheet No. 120E of Tennessee's FPC Gas Tariff, Seventh Revised Volume No. 1. This rate schedule was cancelled as of April 30, 1959.

Hearing Exhibit No. 27

TENNESSEE GAS TRANSMISSION COMPANY

YIELDS ON PREFERRED STOCK ISSUES OF TENNESSEE GAS TRANSMISSION COMPANY

Number as Shown on Pages 16 & 17 of Exhibit 21	Issue	Month of Offering	Yield at Time of Offering	Yield on Moody's Medium Grade Preferred Stocks	Excess Over Moody's Yield
4	4.10%	Apr., 1948	3.86%	3.78%	.08
6	4.25	Sep., 1947	4.10	3.98	.12
8	4.65	Sep., 1949	4.49	4.32	.17
10	4.60	Apr., 1950	4.38	4.15	.23
12	4.64	Oct., 1950	4.50	4.20	.30
15	5.10	May, 1951	5.00	4.39	.61
19	5.25	May, 1952	5.25	4.33	.92
23	5.85	Sep., 1953	5.85	4.73	1.12
25	5.12	Mar., 1954	5.10	4.27	.83
30	4.90	June, 1955	4.90	4.20	.70

Hearing Exhibit No. 30

TENNESSEE GAS TRANSMISSION COMPANY

COMMON STOCK PRICES
PER CENT INCREASE FROM YEAR SHOWN TO DECEMBER, 1959
BASED UPON STANDARD & POOR'S INDEXES AS SET FORTH IN EXHIBIT 20

Line No.	Column 1 Particulars	(2) 1943	(3) 1944	(4) 1945	(5) 1946	(6) 1947	(7) 1948	(8) 1949	(9) 1950	(10) 1951	(11) 1952	(12) 1953	(13) 1954	(14) 1955	(15) 1956	(16) 1957	(17) 1958
1	6 Natural Gas Pipelines	411	421	297	185	186	142	133	110	78	41	39	27	16	10	(2)	(1)
2	425 Industrials	453	415	332	286	328	314	324	247	180	156	156	110	50	28	33	29
3	11 Natural Gas Distributors	308	272	187	122	139	135	115	94	81	71	70	50	33	25	23	8
4	25 Railroads	184	149	84	76	139	120	162	116	69	49	49	40	2	0	19	24
5	30 Electric Utilities	197	172	122	103	132	155	146	125	115	94	82	58	39	38	38	16
6	3 Telephone and Telegraph	74	61	48	40	64	75	83	73	67	67	65	52	40	40	40	31
7	Average	271	248	177	135	165	157	161	128	98	80	77	56	30	24	25	18
8	Rank of Natural Gas Pipelines	2	1	2	2	2	3	4	4	4	6	6	6	5	5	6	6
9	Rank of Electric Utilities	4	4	4	4	5	2	3	2	2	2	2	2	3	2	2	4
10	NOTE:																
11	( ) denotes decrease.																

2346

Hearing Exhibit No. 31

TENNESSEE GAS TRANSMISSION COMPANY

CAPITALIZATION—CONSOLIDATED

FEBRUARY 29, 1960

CAPITALIZATION

	Amount	Per Cent
Long-Term Debt	$ 737,664,739	56.84%
Preferred Stock	158,489,286	12.21
Common Equity (including 4.50% Convertible Preferred Stock)	401,707,519	30.95
Total capitalization	$1,297,861,544	100.00%

ALLOWANCE FOR STOCKHOLDERS' EQUITY

Long-term debt	56.84%	@	4.35%	= 2.47%
Preferred Stock	12.21	@	4.93	= .60
Common stock	30.95	@	Z	= ?
Overall Rate of Return				R

Allowed Return	Allowance for Stockholders' Equity
(R)	(Z)
5.75%	8.66%
6.00	9.47
6.25	10.27
6.50	11.08
6.75	11.89
7.00	12.70

TENNESSEE GAS TRANSMISSION COMPANY

RECONCILIATION OF CONSOLIDATED CAPITALIZATION
FEBRUARY 29, 1960

Line No.	Column 1 Particulars	(2) Debt	(3) Preferred Stock	(4) Common Equity	(5) Total Capitalization
1	PER CONSOLIDATED BALANCE SHEET	$754,355,739	$182,417,500	$383,175,773	$1,319,949,012
2	ADJUSTMENTS MADE BY STAFF:				
3	Issue expense on preferred stock	$ —	$ —	$ (5,024,000)	$ (5,024,000)
4	Issue expense on common stock (estimated)	—	—	(130,000)	(130,000)
5	Issue expense on preferred stock converted	—	—	(54,000)	(54,000)
6		$ —	$ —	$ (5,208,000)	$ (5,208,000)
7	PER STAFF EXHIBIT 24	$754,355,739	$182,417,500	$377,967,773	$1,314,741,012
8	ADJUSTMENTS MADE BY COMPANY:				
9	Reverse staff adjustments for issue expense	$ —	$ —	$ 5,208,000	$ 5,208,000
10	Deduct bank loans due within one year	(16,691,000)	—	—	(16,691,000)
11	Convert 4.50% second preferred	—	(19,264,600)	19,264,600	—
12	Deduct issue expense on common	—	(19,264,600)	19,264,600	—
13	Deduct issue expense on preferred (see note)	—	(4,326,014)	(107,486)	(107,486)
14	Deduct preferred due within one year	—	—	(625,368)	(4,951,382)
15		—	(337,600)	—	(337,600)
16	PER COMPANY EXHIBIT 31	$(16,691,000)	$(23,928,214)	$ 23,739,746	$ (16,879,468)
		$737,664,739	$158,489,286	$401,707,519	$1,297,861,544

17 NOTE:

(1) $625,368 is the balance of issue expense applicable to the 4.50% series convertible preferred stock which series has been included with common equity.

485

(2347)

Hearing Exhibit No. 32

TENNESSEE GAS TRANSMISSION COMPANY AND CONSOLIDATED SUBSIDIARIES
COST OF DEBT CAPITAL
AS OF FEBRUARY 29, 1960

Line No.	Column 1 Description	(2) Balance Outstanding Less Amounts Due Within One Year	(3) Rate	(4) Annual Cost
1	TENNESSEE GAS TRANSMISSION COMPANY:			
2	First Mortgage Pipe Line Bonds—			
3	2¾% series due 1966	$ 15,655,000	2.75%	$ 430,51[illegible]
4	3 % series due 1967	19,700,000	2.93	577,21[illegible]
5	3 % series due 1969	27,000,000	3.01	812,70[illegible]
6	3 % series due 1970	21,540,000	2.94	633,27[illegible]
7	3⅛% series due 1971	21,150,000	3.05	645,07[illegible]
8	3½% series due 1971	28,760,000	3.51	1,009,47[illegible]
9	3⅝% series due 1974	19,270,000	3.57	687,93[illegible]
10	3¾% series due 1974	13,800,000	3.82	527,16[illegible]
11	3½% series due 1975	100,410,000	3.49	3,504,30[illegible]
12	3⅞% series due 1976	41,000,000	3.92	1,607,20[illegible]
13	4¾% series due 1976	42,580,000	4.85	2,065,13[illegible]
14	5¼% series due 1977	44,700,000	5.43	2,427,21[illegible]
15	5⅝% series due 1979	48,000,000	5.54	2,659,20[illegible]
16	5¼% series due 1979	49,500,000	5.27	2,608,65[illegible]
17	Debentures—			
18	3⅞% due 1966	9,719,000	3.94	382,929
19	4¼% due 1974	51,265,000	4.23	2,168,51[illegible]
20	4 % due 1975	19,600,000	4.03	789,88[illegible]
21	4¼% due 1977	25,398,000	4.68	1,188,62[illegible]
22	6 % due 1977	22,500,000	6.33	1,424,25[illegible]
23	5% due 1978	27,680,000	5.20	1,439,36[illegible]
24	Note Payable—			
25	4⅜% due 1962	2,400,000	4.37	104,88[illegible]
26	Total Tennessee Gas Transmission Company	$651,627,000	4.25%	$27,693,48[illegible]

Line No.	Column 1 Description	(2) Balance Outstanding Less Amounts Due Within One Year	(3) Rate	(4) Annual Cost
27	EAST TENNESSEE NATURAL GAS COMPANY:			
28	First Mortgage Pipe Line Bonds—			
29	3½% series due 1969	$ 3,472,000	3.71%	$ 128,811
30	3⅝% series due 1969	3,720,000	3.92	145,824
31	4½% series due 1969	2,689,000	4.84	130,148
32	Convertible Debentures—			
33	5% due 1968	516,950	5.59	28,898
34	Long-Term Notes—			
35	5¾% due 1969	5,833,000	5.75	335,398
36	Total East Tennessee Natural Gas Company	$ 16,230,950	4.74%	$ 769,079
	2349			
37	THE CUMBERLAND CORPORATION:			
38	Bank Loans due 1964	$22,000,000	5.50%	$ 1,210,000
39	THE BAY PETROLEUM CORPORATION:			
40	Bank Loans due 1961	1,500,000	5.00	75,000
41	HARTOL PETROLEUM CORPORATION:			
42	Mortgage Notes—			
43	3¼% due 1962	141,000	3.25	4,583
44	4¼% due 1965	700,000	4.25	29,750
45	Other Notes	7,066	5.00	353
46	MIDWESTERN GAS TRANSMISSION COMPANY:			
47	Bank Loan due 1964	35,000,000	5.07	1,774,500
48	TENBARCO CORPORATION:			
49	Long-Term Notes due 1973	1,551,338	5.00	77,567
50	TENNESSEE PRODUCTION COMPANY			
51	Bank Loans—			
52	4¾% due 1974	1,235,004	4.75	58,663
53	5 % due 1974	3,577,500	5.00	178,875
54	TEN TEN TRAVIS CORPORATION:			
55	Long-Term Notes—			
56	4⅜%-4½% due 1976	2,025,000	4.38	88,695
57	5% due 1977	435,630	5.00	21,782
58	5⅜% due 1979	134,251	5.38	7,223
59	Bank Loan—			
60	5½% due 1961	1,500,000	5.50	82,500
61	Total Tennessee Gas Transmission Company			
62	and Consolidated Subsidiaries	$737,664,739	4.35%	$32,072,053

(2350)

2350

TENNESSEE GAS TRANSMISSION COMPANY
COST OF PREFERRED STOCK CAPITAL
AS OF FEBRUARY 29, 1960

Line No.	Column 1 Description	(2) Balance Outstanding Less Amounts Due Within One Year	(3) Deduct: Issue Expense	(4) Net Balance	(5) Rate	(6) Annual Cost
1	FIRST PREFERRED STOCK:					
2	4.10% series	$ 7,400,000	$ 27,285	$ 7,372,715	3.96%	$ 284,5[illegible]
3	4.25% series	7,400,000	24,072	7,375,928	4.26	314,2[illegible]
4	4.60% series	8,750,000	49,198	8,700,802	4.51	392,4[illegible]
5	4.64% series	9,000,000	33,920	8,966,080	4.66	417,8[illegible]
6	4.65% series	8,750,000	40,820	8,709,180	4.67	406,[illegible]
7	4.90% series	20,000,000	695,411	19,304,589	5.18	999,[illegible]
8	5.10% series	9,000,000	357,406	8,642,594	5.25	453,7[illegible]
9	5.12% series	9,750,000	328,849	9,421,151	5.37	505,9[illegible]
10	5.25% series	9,250,000	369,766	8,880,234	5.50	488,4[illegible]
11	Total First Preferred Stock	$ 89,300,000	$1,926,727	$ 87,373,273	4.88%	$4,263,78[illegible]
12	SECOND PREFERRED STOCK:					
13	4.72% series	$ 43,997,500	$1,419,549	$ 42,577,951	4.88%	$2,077,80[illegible]
14	5.00% series	29,517,800	979,738	28,538,062	5.17	1,475,4[illegible]
15	Total Second, Preferred Exclusive of 4.50% Series	$ 73,515,300	$2,399,287	$ 71,116,013	5.00%	$3,553,2[illegible]
16	Total Preferred Stock Exclusive of 4.50% Series	$162,815,300	$4,326,014	$158,489,286	4.93%	$7,817,0[illegible]
17	4.50% series convertible second preferred stock	19,264,600	625,368	18,639,232	4.65	866,7[illegible]
18	Total Preferred Stock	$182,079,900	$4,951,382	$177,128,518	4.90%	$8,683,7[illegible]

2351

Hearing Exhibit No. 33

TENNESSEE GAS TRANSMISSION COMPANY
CAPITALIZATION—NONCONSOLIDATED
FEBRUARY 29, 1960

CAPITALIZATION

	Amount	Per Cent
Long-Term Debt	$ 651,627,000	54.91%
Preferred Stock	158,489,286	13.36
Common equity (including 4.50% convertible preferred stock	376,604,725	31.73
Total capitalization	$1,186,721,011	100.00%

ALLOWANCE FOR STOCKHOLDERS' EQUITY

Long-term debt	54.91%	@	4.25%	2.33%
Preferred stock	13.36	@	4.93	.66
Common stock	31.73	@	Z	Z
Overall Rate of Return				R

Allowed Return	Allowance for Stockholders' Equity
(R)	(Z)
5.75%	8.70%
6.00	9.49
6.25	10.27
6.50	11.06
6.75	11.85
7.00	12.64

2352

TENNESSEE GAS TRANSMISSION COMPANY
RECONCILIATION OF NONCONSOLIDATED CAPITALIZATION
FEBRUARY 29, 1960

Line No.	Column 1 Particulars	(2) Debt	(3) Preferred Stock	(4) Common Equity	(5) Total Capitalizatio
1	AMOUNT PER BALANCE SHEET	$668,318,000	$182,417,500	$358,072,979	$1,208,808,47
2	ADJUSTMENTS:				
3	Deduct bank loans due within one year	$(16,691,000)	$ —	$ —	$ (16,691,00
4	Convert 4.50% second preferred	—	(19,264,600)	19,264,600	—
5	Deduct issue expense on common	—	—	(107,486)	(107,48
6	Deduct issue expense on preferred (see note)	—	(4,326,014)	(625,368)	(4,951,38
7	Deduct preferred due within one year	—	(337,600)	—	(337,60
8	Total adjustments	$(16,691,000)	$(23,928,214)	$ 18,531,746	$ (22,087,46
9	AMOUNT PER EXHIBIT 33	$651,627,000	$158,489,286	$376,604,725	$1,186,721,01

10 NOTE:
$625,368 is the balance of issue expense applicable to the 4.50% series convertible preferred stock which series has been included with common equity.

2353

Hearing Exhibit No. 34

TENNESSEE GAS TRANSMISSION COMPANY
CAPITALIZATION—NONCONSOLIDATED
MARCH 31, 1960

CAPITALIZATION

	Amount	Per Cent
Long-Term Debt	$ 648,702,000	54.63%
Preferred Stock	158,489,286	13.34
Common Equity (including 4.50% Convertible Pfd. Stock)	380,329,705	32.03
Total Capitalization	$1,187,520,991	100.00%

ALLOWANCE FOR STOCKHOLDERS' EQUITY

Long-term debt	54.63%	@	4.26%	= 2.33%
Preferred stock	13.34	@	4.93	= .66
Stockholders equity	32.03	@	Z	= Y
Overall Rate of Return				R

Allowed Return	Allowance for Stockholders' Equity
(R)	(Z)
5.75%	8.62%
6.00	9.40
6.25	10.18
6.50	10.96
6.75	11.74
7.00	12.52

2354

TENNESSEE GAS TRANSMISSION COMPANY
RECONCILIATION OF NONCONSOLIDATED CAPITALIZATION
MARCH 31, 1960

Line No.	Column 1 Particulars	(2) Debt	(3) Preferred Stock	(4) Common Equity	(5) Total Capitalization
1	AMOUNT PER BALANCE SHEET	$664,783,000	$180,575,000	$363,603,943	$1,208,961,943
2	ADJUSTMENTS:				
3	Deduct bank loans due within one year	$(16,081,000	$ —	$ —	$ (16,081,000
4	Convert 4.50% second preferred	—	(17,463,700)	17,463,700	—
5	Deduct issue expense on common	—	—	(171,031)	(171,031
6	Deduct issue expense on preferred (see note)	—	(4,326,014)	(566,907)	(4,892,921
7	Deduct preferred due within one year	—	(296,000)	—	(296,000
8	Total adjustments	$(16,081,000	($22,085,714)	$ 16,725,762	(21,440,952
9	AMOUNT PER EXHIBIT 34	$648,702,000	$158,489,286	$380,329,705	$1,187,520,991

10 NOTE:
$566,907 is the balance of issue expense applicable to the 4.50% series convertible preferred stock which series has been included with common equity.

2355

Hearing Exhibit No. 35

TENNESSEE GAS TRANSMISSION COMPANY AND CONSOLIDATED COMPANIES AS OF MARCH 31, 1960

Line No.	Column 1 Description	(2) Balance Outstanding Less Amounts Due Within One Year	(3) Rate	(4) Annual Cost
1	TENNESSEE GAS TRANSMISSION COMPANY:			
2	First Mortgage Pipe Line Bonds—			
3	2¾% series due 1966	$ 14,335,000	2.75%	$ 394,213
4	3 % series due 1967	18,700,000	2.93	547,910
5	3 % series due 1969	27,000,000	3.01	812,700
6	3 % series due 1970	21,540,000	2.94	633,276
7	3⅛% series due 1971	21,150,000	3.05	645,075
8	3½% series due 1971	28,760,000	3.51	1,009,476
9	3⅝% series due 1974	19,270,000	3.57	687,939
10	3¾% series due 1974	13,800,000	3.82	527,160
11	3½% series due 1975	100,410,000	3.49	3,504,309
12	3⅞% series due 1976	41,000,000	3.92	1,607,200
13	4¾% series due 1976	42,580,000	4.85	2,065,130
14	5¼% series due 1977	44,700,000	5.43	2,427,210
15	5¾% series due 1979	48,000,000	5.54	2,659,200
16	5¼% series due 1979	49,500,000	5.27	2,608,650
17	Debentures—			
18	3⅞% due 1966	9,710,000	3.94	382,929
19	4¼% due 1974	51,265,000	4.23	2,168,510
20	4 % due 1975	18,995,000	4.03	765,499
21	4½% due 1977	25,398,000	4.68	1,188,626
22	6 % due 1977	22,500,000	6.33	1,424,250
23	5 % due 1978	27,680,000	5.20	1,439,360
24	Note Payable—			
25	4⅜% due 1962	2,400,000	4.37	104,880
26	Total Tennessee Gas Transmission Company	$648,702,000	4.26%	$27,603,502

(2355)

Line No.	Column 1 Description	(2) Balance Outstanding Less Amounts Due Within One Year	(3) Rate	(4) Annual Cost
27	EAST TENNESSEE NATURAL GAS COMPANY:			
28	First Mortgage Pipe Line Bonds—			
29	3½% series due 1969	$ 3,472,000	3.71%	$ 128,81
30	3⅞% series due 1969	3,720,000	3.92	145,82
31	4½% series due 1969	2,689,000	4.84	130,14
32	Convertible Debentures—			
33	5% due 1968	515,950	5.59	28,84
34	Long-Term Notes—			
35	5¾% due 1969	5,833,000	5.75	335,39
36	Total East Tennessee Natural Gas Company	$ 16,229,950	4.74%	$ 769,02

2356

37	THE CUMBERLAND CORPORATION:			
38	Bank Loans due 1964	$ 22,000,000	5.50%	$ 1,210,00
39	THE BAY PETROLEUM CORPORATION:			
40	Bank Loans due 1961	1,375,000	5.00	68,75
41	HARTOL PETROLEUM CORPORATION:			
42	Mortgage Notes—			
43	3¼% due 1962	141,000	3.25	4,58
44	4¼% due 1965	700,000	4.25	29,75
45	Other Notes	7,066	5.00	35
46	MIDWESTERN GAS TRANSMISSION COMPANY:			
47	Bank Loan due 1964	35,000,000	5.07	1,774,50
48	TENBARCO CORPORATION			
49	Long-Term Notes due 1973	1,519,672	5.00	75,98
50	TENNESSEE PRODUCTION COMPANY:			
51	Bank Loans—			
52	4¾% due 1974	1,211,255	4.75	57,53
53	5% due 1974	3,510,000	5.00	175,00
54	TEN TEN TRAVIS CORPORATION:			
55	Long-Term Notes—			
56	4⅜%-4½% due 1976	2,025,000	4.38	88,69
57	5% due 1977	133,917	5.38	7,20
58	5⅜%	434,830	5.00	21,74
59	Bank Loan—			
60	5½% due 1961	1,500,000	5.50	82,50
61	Total Tennessee Gas Transmission Company and Consolidated Subsidiaries	$734,489,690	4.35%	$31,969,62

2357

TENNESSEE GAS TRANSMISSION COMPANY
COST OF PREFERRED STOCK CAPITAL
AS OF MARCH 31, 1960

Line No.	Particulars	Column 1 (2) Balance Outstanding Less Amounts Due Within One Year	(3) Deduct Issue Expenses	(4) Net Balance	(5) Rate	(6) Annual Cost
1	FIRST PREFERRED STOCK:					
2	4.10% series	$ 7,400,000	$ 27,285	$ 7,372,715	3.86%	$ 284,587
3	4.25% series	7,400,000	24,072	7,375,928	4.26	314,215
4	4.60% series	8,750,000	49,198	8,700,802	4.51	392,406
5	4.64% series	9,000,000	33,920	8,966,080	4.66	417,819
6	4.65% series	8,750,000	40,820	8,709,180	4.67	406,719
7	4.90% series	20,000,000	695,411	19,304,589	5.18	999,978
8	5.10% series	9,000,000	357,405	8,642,595	5.25	453,736
9	5.12% series	9,750,000	328,850	9,421,150	5.37	505,916
10	5.25% series	9,250,000	369,766	8,880,234	5.50	488,413
15	Total First Preferred Stock	$ 89,300,000	$1,926,727	$87,373,273	4.88%	$4,263,789
12	SECOND PREFERRED STOCK:					
13	4.72% series	$ 43,997,500	$1,419,549	$42,577,951	4.88%	$2,077,804
14	5.00% series	29,517,800	979,738	28,538,062	5.17	1,475,418
15	Total Second Preferred Stock Exclusive of 4.50%	$ 73,515,300	$2,399,287	$71,116,013	5.00%	$3,553,222
16	Total Preferred Stock Exclusive of 4.50%	$162,815,300	$4,326,014	$158,489,286	4.93%	$7,817,011
17	4.50% series Second Preferred Stock	17,463,700	566,907	16,896,793	4.65	785,701
18	Total Preferred Stock	$180,279,000	$4,892,921	$175,386,079	4.91%	$8,602,712

Hearing Exhibit No. 36

COMMON STOCK PRICES
PERCENT INCREASE FROM YEAR SHOWN TO DECEMBER, 1959
BASED UPON STANDARD & POOR'S INDEXES AS SET FORTH IN EXHIBIT 20 AND MARKET PRICE OF TENNESSEE GAS TRANSMISSION COMPANY STOCK AS SET FORTH IN EXHIBIT 21, PAGE 29, COLUMN (h)

Line No.		Column 1 Particulars	(2) 1946	(3) 1947	(4) 1948	(5) 1949	(6) 1950	(7) 1951	(8) 1952	(9) 1953	(10) 1954	(11) 1955	(12) 1956	(13) 1957	(14) 1958
1		Tennessee Gas Transmission Company	700	625	375	238	176	169	132	134	107	44	39	35	11
2	6	Natural Gas Pipelines	185	186	142	133	110	78	41	39	27	16	10	(2)	(1)
3	425	Industrials	286	328	314	324	247	180	156	156	110	50	28	33	29
4	11	Natural Gas Distributors	122	139	135	115	94	81	71	70	50	33	25	23	8
5	25	Railroads	76	139	120	162	116	69	49	49	40	2	0	19	24
6	30	Electric Utilities	102	132	155	146	125	115	94	82	58	39	38	38	16
7	3	Telephone and Telegraph	40	64	75	83	73	67	67	65	52	40	40	40	31
8		Average	216	230	188	172	134	108	87	86	63	32	26	28	17
9		Rank of Tennessee Gas Transmission Company	1	1	1	2	2	2	2	2	2	2	2	3	5
10		Rank of Electric Utilities	4	5	3	4	3	3	3	3	3	4	3	2	4
11		NOTE:													
12		( ) denotes decrease.													

4383

Tennessee Data Supporting Revised Tariff, Filed October 5, 1959

STATEMENT OF NATURE, REASONS AND BASES FOR CHANGES IN TARIFF

The changes in rates filed herewith will provide additional revenues sufficient to compensate Tennessee Gas Transmission Company (Tennessee) for deficiencies in revenues in the amount of $27,129,624 based upon operations for the twelve months ended July 31, 1959, as adjusted. This deficiency in revenues is caused principally by increases in the cost of purchased gas, cost of capital and, to a somewhat lesser extent, by increases in taxes, and salary and wages. The changes in rates filed herewith relate to all jurisdictional pipeline sales and jurisdictional transportation of natural gas, and also to certain minor jurisdictional field sales. Pro forma adjustments in connection with this filing are limited to known changes in the cost of gas supply and other costs and to the correction for the lag in transferring property from construction work in progress to gas plant in service. The presently effective jurisdictional sales rates were established through Tennessee's filing of November 14, 1958 in Docket No. G-17166 which rates became effective under an undertaking on May 15, 1959. The presently effective jurisdictional transportation rates were established through Tennessee's filing of January 14, 1957 in Docket No. G-11980, which transportation rates became effective under an undertaking on July 14, 1957.

The attached statements have been prepared in accordance with the requirements of Part 154 of the Commission's Rules and Regulations. An explanation of the major adjustments made for increased costs and the methods used in determining the cost of service and revenue deficiency is set forth below:

4386

Rate of Return

A 7% rate of return on the average depreciated rate base has been included in the cost of service. See Statement F contained in this filing for a statement of Tennessee's position with respect to rate of return.

4407

(Received Oct. 8, '59)

Tennessee Gas Transmission Company Rate of Return Claimed

Tennessee claims 7% per annum to be a fair and reasonable rate of return at the present time. An amount for return at this rate on the average depreciated rate base has been included in the cost of service in this filing. Based on the twelve months ending July 31, 1959, a 7% rate of return, if earned, would yield earnings per share of common stock of $1.58 based upon the number of shares outstanding as of July 31, 1959.

Pursuant to the requirements of Section 154.63 of the Regulations of the Commission, Statement F-1 contained herein shows each class and series of long-term debt capital which was outstanding as of July 31, 1959, the end of the twelve months period of actual experience upon which this filing is based. As will be noted therein the cost of debt capital to Tennessee has increased from issue to issue with but few exceptions. As a result the historical cost of debt capital has reached the level of 4.22% per annum as of July 31, 1959. There is every indication that this cost of debt capital will continue to increase further in the foreseeable future.

On June 5, 1957 Tennessee issued $50 million principal amount of 5¼% series first mortgage bonds due in 1977

at a cost to the Company of 5.43% per annum. On July 31, 1957 Tennessee issued $25 million principal amount of 6% debentures which are due in 1977 on which the cost to the Company was 6.33% per annum. On April 23, 1958 Tennessee issued $30 million principal amount of 5% debentures due in 1978 at a cost to the Company of 5.20% per annum. On September 23, 1958 Tennessee issued $50 million principal amount of 5⅜% series first mortgage bonds due in 1979 on which the

cost to the Company was 5.54% per annum. On July 29, 1959 an additional $50 million principal amount of 5¼% series of first mortgage bonds due in 1979 were issued at an annual cost of 5.27% to the Company. On these relatively recent issues of debt the cost to the Company of the capital funds has ranged from 5.20% to 6.33%.

During the month of September, 1959 the yield on Moody's utility bonds rated A rose above 5% per annum for the first time since January, 1935, over 24 years ago. The yield on Moody's A-rated utility bonds as of September 17, 1959 was 5.05%. It should be noted that this average yield is on seasoned issues and is lower than cost of capital on specific new issues. For example, on September 17, 1959 the Georgia Power Company issued $18 million principal amount of 5¾% series first mortgage bonds on which the yield was 5.65% with a cost to the company of 5.77% per annum. This is an A-rated security, the same rating as applied to Tennessee's bonds. According to the Wall Street Journal of September 18, 1959, this borrowing is the costliest on a comparable issue of securities by this company since March, 1934. This cost of 5.77% is comparable to the cost of 5.15% for the $25 million issue of the same rating sold July 8, 1959 by Long Island Lighting Company. A clear indication of the increase in cost of

debt money is provided by the fact that United States Treasury securities are selling to yield about 5%.

New England Telephone and Telegraph Company on September 21, 1959 sold $45 million principal amount of double-A rated 35-year debentures on an interest cost basis of 5.72%. According to the Journal of September 22 this was the highest borrowing charge for a bond issue by any Bell System unit since November 5, 1923. Furthermore, electric power and telephone issues sell on a lower yield basis than gas transmission bonds.

4409

There is no indication that the trend in the cost of debt capital will be reversed at any time in the foreseeable future. Regardless of the continuing increase in the cost of new debt capital the historical cost of Tennessee's outstanding debt capital will continue to increase as the sinking fund operation retires the older, lower cost capital.

Statement F-4 submitted herewith sets forth what is sometimes called a "cost of capital" computation including 14.60% return on the book value of common equity capital. This statement is based on the ratio of capitalization actually outstanding as of July 31, 1959, with the cost of debt and preferred stock capital at the rates developed in Statements F-1 and F-2 included herewith. Statement F-1 and F-2 do not include any expenses incurred in refunding securities or call premiums which have been paid. However, it is Tennessee's position that such expenses should be considered in a proper determination of the cost of capital. It is also Tennessee's position that a fair rate of return should not and cannot be determined solely from the data disclosed by Statements F-1, F-2 and F-3.

The amount of common equity capital reflected in Statement F-4 has been pro formed to include the conversion of

the 4½% series of cumulative convertible second preferred stock. On this basis, common equity represents 26.86% of total capitalization. Substantial conversions of the 4½% series of second preferred stock into common shares have already occurred as evidenced by the fact that out of the $40 million principal amount originally issued, $12,150,300 was in the form of common stock as of July 31, 1959. Substantially all (94.4%) of this conversion occurred within the twelve months ending July 31, 1959.

4410

Tennessee realized approximately a 14.60% return on common equity capital in previous rate cases. Such an allowance is required to preserve Tennessee's financial integrity and to keep it in the financial position necessary to enable it to attract the capital needed by its natural gas business at reasonable rates in the present tight money situation. While such an allowance on book equity in previous rate cases resulted from a 6% overall return, at least a 7% return is now required to provide an equivalent allowance. Such a return would permit Tennessee to continue its long-established annual dividend of $1.40 per share of common stock. Accordingly, Tennessee respectfully submits that the 7% overall rate of return claimed in this filing is fair and reasonable.

• • • • •

4736

(Docketed Nov. 4, 1959)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Docket No. G-19983

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, William R. Connole and Arthur Kline.

In the Matter of
TENNESSEE GAS TRANSMISSION COMPANY

Order Suspending Proposed Tariff and Other Revised Tariff Sheets and Providing For Hearing

(Issued November 4, 1959)

Tennessee Gas Transmission Company (Tennessee) on October 5, 1959, pursuant to Section 4 of the Natural Gas Act and the Commission's Regulations thereunder, particularly Part 154 thereof [18 CFR Part 154], tendered for filing its FPC Gas Tariff Eighth Revised Volume No. 1, Second Revised Sheets Nos. 10, 11, and 25 and Fourth Revised Sheet No. 48 to its FPC Gas Tariff 4th Revised Volume No. 2, and First Revised Sheets Nos. 30, 51, 85, 105, 294, 305, 319, 341, 353, 517, 531, 536, 549, 551, 565, 567, 580, 598, 607, 613, 615, 650, 1012, 1038, 1040, 1054, 1056, 1072, 1074, 1081, 1083 and 1090. Second Revised Sheets Nos. 281 and 307 and Fourth Revised Sheets Nos. 268 and 279 to its FPC Gas Tariff Original Volume No. 3.

The tariff changes contained in the tendered filing effect a general increase in rates and charges for sale in interstate commerce of natural gas for ultimate public consumption subject to the jurisdiction of the Commission under the Natural Gas Act. Tennessee requests that the increased rates and charges be allowed to become effective as of November 5, 1959.

The tariff changes proposed by Tennessee involve increases for all of the services rendered over its transmission system, except surplus interruptible service and transportation service under its rate schedule T-2, and for 17 of its field sales, and amounts to an increase of $26,590,138 or 10.1% based on sales for the year ended July 31, 1959. The proposed increase is in addition to the increases now in effect subject to refund in Docket Nos. G-11980 and G-17166.

In support of its proposed increase, Tennessee states that it has filed to compensate for deficiencies in revenues arising principally from increases in the cost of purchased gas, cost of capital and to a limited extent by increases in taxes and salaries and wages. Tennessee also relies on a 7% rate of return and associated income taxes to support this proposed increase.

4737

The proposed rates in the tendered filing deviate substantially from allocated demand and commodity costs in that the amount of increased costs claimed for the most part has been added to the demand portion of the rate. In support of that deviation, Tennessee states that the new rates have been designed "to recoup the total cost of services allocated to each zone while at the same time maintaining the present level of commodity charges. This has been accomplished by determining the demand charge which, together with the present commodity charge will provide refund equal to the cost of service allocated to each zone."

The increased rates and charges proposed by Tennessee's revised tariff and other tariff sheets have not been shown to be justified and may be unjust, unreasonable, unduly discriminatory, or preferential, or otherwise unlawful.

The Commission finds:

It is necessary and proper in the public interest and to aid in the enforcement of the provisions of the Natural Gas Act that the Commission enter upon a hearing concerning the lawfulness of the rates, charges, classifications and services contained in Tennessee's FPC Gas Tariff Eighth Revised Volume No. 1 and its FPC Gas Tariff's Fourth Revised Volume No. 2, and Original Volume No. 3 as proposed to be amended by the revised tariff sheets identified above and that such tariff and revised tariff sheets be suspended and the use thereof deferred as hereinafter provided.

The Commission orders:

(A) Pursuant to the authority of the Natural Gas Act, particularly Sections 4 and 15 thereof, the Commission's Rules of Practice and Procedure and the Regulations under the Natural Gas Act (18 CFR Chap. I) a public hearing be held on December 15, 1959, at 10:00 a.m. (EST) in a hearing room of the Federal Power Commission, 441 G Street, N.W., Washington, D. C. concerning the lawfulness of the rates, charges, classifications, and services contained in Tennessee's FPC Gas Tariff Eighth Revised Volume No. 1; its FPC Gas Tariff Fourth Revised Volume No. 2 as proposed to be amended by Second Revised Sheets Nos. 10, 11 and 25 and Fourth Revised Sheet No. 48 and its FPC Gas Tariff Original Volume No. 3 as proposed to be revised by First Revised Sheets Nos. 30, 51, 85, 105, 294, 305, 319, 341, 353, 517, 531, 536, 549, 551, 565, 567, 580, 598, 607, 613, 615, 650, 1012, 1038, 1040, 1054, 1056, 1072, 1074, 1081, 1083, and 1090. Second Revised Sheets Nos. 281 and 307 and Fourth Revised Sheets Nos. 268, and 279.

(B) Pending such hearing and decision thereon, Tennessee's proposed FPC Gas Tariff Eighth Revised Volume

No. 1 and the other revised tariff sheets identified in paragraph (A) above hereby are suspended and their use deferred until April 5, 1960 and until such further time as they may be made effective in the manner prescribed by the Natural Gas Act.

(C) Interested State commissions may participate as provided by Sections 1.8 and 1.37 (f) of the Commission's Rules of Practice and Procedure [18 CFR 1.8 and 1.37 (f)].

By the Commission.

JOSEPH H. GUTRIDE,
Secretary.

5189

(Docketed Apr. 29, 1960)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Docket No. G-19983

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck and Arthur Kline.

TENNESSEE GAS TRANSMISSION COMPANY

Order Making Effective Proposed Tariff Changes Upon Filing of Undertaking To Assure Refund of Excess Charges

(Issued April 29, 1960)

Tennessee Gas Transmission Company (Tennessee) on October 5, 1959, tendered for filing its FPC Gas Tariff, Eighth Revised Volume No. 1, Second Revised Sheets Nos. 10, 11 and 25 and Fourth Revised Sheet No. 48 to its FPC Gas Tariff, Fourth Revised Volume No. 2, and First Revised Sheets Nos. 30, 51, 85, 105, 294, 305, 319, 341, 353, 517, 531; 536, 549, 551, 565, 567, 580, 598, 607, 613, 615, 650, 1012, 1038, 1040, 1054, 1056, 1072, 1074, 1081, and 1090,

Second Revised Sheets Nos. 281 and 307, and Fourth Revised Sheets Nos. 268 and 279 to its FPC Gas Tariff, Original Volume No. 3, proposed to become effective November 5, 1959. Pursuant to the authority contained in the Natural Gas Act, particularly Sections 4 and 15 thereof, the Commission, by order issued November 4, 1959, provided for a hearing concerning the lawfulness of the proposed rates, charges, classifications and services contained in Tennessee's FPC Gas Tariffs as proposed to be changed by the above-designated tariff and tariff sheets, and pending such hearing and decision thereon, suspended and deferred the use of the proposed tariff and tariff sheets until April 5, 1960, and until such further time thereafter as they might be made effective in the manner prescribed by the Natural Gas Act.

On January 15, 1960, pursuant to Commission order issued December 16, 1959, in Docket No. G-18877, *et al.*, Tennessee tendered for filing First Revised Sheets Nos. 62, 63, 64, 65 and 66 to its FPC Gas Tariff, Eighth Revised Volume No. 1. By Commission order issued February 12, 1960, the hearing ordered in Docket No. G-19983 was also to concern the lawfulness of the rates, charges classifications and services contained in First Revised Sheets Nos. 62, 63, 64, 65 and 66 to Tennessee's FPC Gas Tariff, Eighth Revised Volume No. 1, and the use of these proposed tariff sheets was likewise, suspended until April 5, 1960, and until such further time as they might be made effective in the manner prescribed by the Natural Gas Act.

5190

The proposed tariff changes provide for increased rates and charges for sales in interstate commerce of natural gas for resale for ultimate public consumption, subject to the jurisdiction of the Commission, over and above the rates and charges being collected subject to refund in

Docket No. G-11980, from July 14, 1957 to May 15, 1959, and in Docket No. G-17166 since May 15, 1959.

This proceeding has not been concluded, nor a decision herein rendered.

On March 9, 1960, Tennessee, in accordance with the provisions of the Natural Gas Act, particularly Section 4 (e) thereof, filed a motion in this proceeding requesting that the proposed tariff and tariff changes identified above be made effective as of April 5, 1960.

The Commission finds:

It is appropriate and necessary in carrying out the provisions of the Natural Gas Act to require Tennessee to file an undertaking as hereinafter ordered and conditioned.

The Commission orders:

(A) Upon execution by Tennessee of the agreement and undertaking described in paragraph (C) below and acceptance thereof, evidenced by a letter addressed to Tennessee by the Secretary of the Commission, the rates, charges, classifications and services set forth in Tennessee's FPC Gas Tariff, Eighth Revised Volume No. 1 and First Revised Sheets Nos. 62, 63, 64, 65 and 66 thereto, Second Revised Sheets Nos. 10, 11 and 25 and Fourth Revised Sheet No. 48 to Tennessee's FPC Gas Tariff, Fourth Revised Volume No. 2, and First Revised Sheets Nos. 30, 51, 85, 105, 294, 305, 319, 341, 353, 517, 531, 536, 549, 551, 565, 567, 580, 598, 607, 613, 615, 650, 1012, 1038, 1040, 1054, 1956, 1072, 1074, 1081, 1083, and 1090, Second Revised Sheet Nos. 281 and 307, and Fourth Revised Sheets Nos. 268, and 279 to Tennessee's FPC Gas Tariff, Original Volume No. 3, shall be effective as of April 5, 1960, subject to further orders of the Commission in this proceeding.

(B) Tennessee shall refund at such times and in such manner as may be required by final order of the Commis-

sion, the portion of the increased rates found by the Commission in this proceeding not justified, together with interest thereon at the rate of 7 percent per annum from the date of payment to Tennessee until refunded; shall bear all costs of any such refunding; shall keep accurate accounts in detail of all amounts received by reason of the increased rates or charges effective as of April 5, 1960, for each billing period, specifying by whom and in whose behalf such amounts were paid; and shall report (original and one copy), in writing and under oath to the Commission monthly, for each billing period, and for each purchaser,

the billing determinants of natural gas sales to such purchaser and the revenues resulting therefrom, as computed under the rates in effect immediately prior to July 14, 1957, until Commission determination of the rates and charges in Docket Nos. G-11980, and G-17166, then under each of those rates, and under the rates allowed by this order to become effective, together with the differences in the revenues so computed.

(C) As a condition of this order, within 15 days from the date of issuance hereof, Tennessee shall execute and file with the Secretary of this Commission its written agreement and undertaking to comply with the terms of paragraph (B) hereof, signed by a responsible officer of the corporation, evidenced by proper authority from the Board of Directors, and accompanied by a certificate showing service of copies thereof upon all purchasers under the rate schedule involved, as follows:

Agreement and Undertaking of Tennessee Gas Transmission Company to Comply With the Terms and Conditions of Paragraph (B) of Federal Power Com-

mission's Order Making Effective Proposed Tariff Changes.

In conformity with the requirements of the order issued , 1960, in Docket No. G-19983, Tennessee Gas Transmission Company hereby agrees and undertakes to comply with the terms and conditions of paragraph (B) of said order, and has caused this agreement and undertaking to be executed and sealed in its name by its officers, thereupon duly authorized in accordance with the terms of the resolution of its Board of Directors, a certified copy of which is appended hereto this day of 1960.

TENNESSEE GAS
TRANSMISSION COMPANY
By .....

Attest:
Secretary

5192

(D) If Tennessee shall, in conformity with the terms and conditions of paragraph (B) of this order, make the refunds as may be required by order of the Commission, the undertaking shall be discharged, otherwise it shall remain in full force and effect.

By the Commission.

JOSEPH H. GUTRIDE,
Secretary.

5202

TENNNESSEE GAS TRANSMISSION COMPANY
P. O. Box 2511
Tennessee Building
Capitol 3-4841
Houston, Texas

May 4, 1960

(Received May 6, 1960

Federal Power Commission
Washington 25, D. C.

RE: TENNESSEE GAS TRANSMISSION COMPANY

Docket No. G-19983

Attention: Mr. Joseph H. Gutride, Secretary

Agreement and Undertaking of Tennessee Gas Transmission Company to Comply with Terms and Conditions of Paragraph (B) of Federal Power Commission's Order Making Effective Proposed Tariff Changes.

In conformity with the requirements of the order issued April 29,. 1960, in Docket No. G-19983, Tennessee Gas Transmission Company hereby agrees and undertakes to comply with the terms and conditions of Paragraph (B) of said order, and has caused this agreement and undertaking to be executed and sealed in its name by its officers, thereupon duly authorized in accordance with the terms of the resolution of its Board of Directors, a certified copy of which is appended hereto this 4th day of May, 1960.

A copy of this agreement and undertaking together with the attached resolution of the Board of Directors is being served today by mail upon all purchasers under rate

schedules involved in the above docket as evidenced by the attached certificate of service.

TENNESSEE GAS TRANSMISSION COMPANY
By R. L. McVEY
Senior Vice President

Attest:
Assistant Secretary

5203

(Received May 6, 1960)

I, L. R. Spence, do hereby certify that I am the duly elected, qualified and acting Assistant Secretary of Tennessee Gas Transmission Company, a Delaware corporation, and that as such, have custody of the corporate records and seal of said Company; that attached hereto are true and correct copies of certain resolutions duly adopted at a meeting of the Board of Directors of said Company held in Houston, Texas on March 16, 1960, as the same appear in the minute book of said Company; that these resolutions remain in full force and effect as of the date hereof and have not been amended, repealed, rescinded or changed in any way whatsoever.

In Witness Whereof, I have hereunto set my hand and affixed the corporate seal of said Tennessee Gas Transmission Company, this 4th day of May, A. D. 1960.

(Corporate Seal)

L. R. SPENCE
Assistant Secretary

5204

WHEREAS, Tennessee Gas Transmission Company has made application in Docket No. G-19983 to the Federal Power Commission for an increase in the rates for gas sold and the Commission has suspended until April 5, 1960, the effectiveness of such increase, and the Company has filed a motion with the Commission to place such increased rates in effect as of April 5, 1960, subject to the refund by the Company of such portion of such increase, if any, as may ultimately be determined by the Commission not to be just and reasonable.

NOW, THEREFORE, BE IT AND IT HEREBY IS

RESOLVED, that the President or a Vice President and the Secretary or an Assistant Secretary of this Company be and they hereby are authorized, empowered and directed, for and on behalf of this Company, to file with the Federal Power Commission an acceptance of an order of the Commission in Docket No. G-19983 permitting such increased rates to become effective and obligating the Company to refund to customers all or the portion, if any, of the difference between the increased rates and charges placed in effect as of April 5, 1960, and those in effect immediately prior thereto, as may ultimately be determined by the Commission to be not just and reasonable, together with interest thereon at the rate of 7% per annum; and in that connection, the Company shall bear all cost of any such refund and shall keep and maintain accurate accounts of the amounts received by reason of such increased rates, and make such reports thereon to the Commission from time to time as may be required and such officers are further authorized to accept for and on behalf of this Company such further terms and conditions contained in any such order as may in their opinion be deemed reasonable and appropriate.

5278

(Docketed June 17, 1960)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, William R. Connole and Arthur Kline.

Docket No. G-19983

TENNESSEE GAS TRANSMISSION COMPANY

Order Adopting Interim Order Procedure Omitting Intermediate Decision and Fixing Date For Oral Argument

(Issued June 17, 1960)

The Presiding Examiner on May 27, 1960, reported to the Commission two motions entered orally upon the record by Staff counsel during the hearing on May 25, 1960. Those motions request (1) that the fair rate of return for Tennessee Gas Transmission Company (Tennessee) be determined on an interim order procedure, and (2) that the intermediate decision procedure be waived in accordance with Section 1.30 of the Commission's Rules of Practice and Procedure and that the record on rate of return be certified to the Commission for direct decision on this issue. There was no objection to the latter motion.

It is the contemplation of the first motion that Tennessee will be required to make immediate refund of excess revenues and to reduce its rates if it is determined under the intermediate order procedure that the fair rate of return for Tennessee is less than the 7 percent rate of return requested by it in this docket. It is further contemplated that for purposes of refund and reduced rates, all other factors relating to rate base, cost of service, allocations, etc., will be used as presented by Tennessee on the

record, without prejudice to the rights of any party to question any of those items in subsequent phases of this proceeding, if such item is determined to be in issue by the Presiding Examiner.

The stated objective of Staff's proposals is to alleviate as soon as possible some of the financial burden of increased rates being borne by Tennessee's wholesale customers.

Several parties to the proceeding filed memoranda on the above motions. Generally stated, those memoranda do not object to the interim order procedure determining a fair rate of return for Tennessee nor omission of the intermediate decision procedure. Some of the parties, however, do object to that part of the motion which requests that upon determination of the fair rate of return, Tennessee be directed to make immediate refunds and rate reductions. Those objections are based on the fact that there has been no decision on the issue of allocation of costs

to zones on Tennessee's system. The parties contend that absent a determination of that issue, an interim order prescribing refunds and reduction in rates would be both unlawful and inequitable in that it might prevent Tennessee from recovering its entire cost of service, or deprive customers in certain zones of the amount of refund dollars they contend they would receive if the zone allocation methods they are sponsoring are determined to be proper for Tennessee.

The issue of allocation of costs to zones has been fully heard in Docket No. G-11980 and is now before the Presiding Examiner in that docket for decision. The parties hereto also contend that an interim order prescribing refunds and rate reduction will constitute prejudgment of

that issue even though such interim order used the zone allocation method presented by Tennessee only *arguendo* and without prejudice to final determination of that issue.

In view of the importance of the matters referred to above, and as requested by Tennessee, it would appear appropriate that opportunity to present oral argument be afforded to the parties, in addition to filing briefs on the issue of the proper rate of return for Tennessee, as hereinafter provided.

The Commission finds:

(1) It is appropriate in carrying out the provisions of the Natural Gas Act that the proper rate of return for Tennessee be determined under an interim order procedure.

(2) The Staff's motion for waiver of the intermediate decision on the rate of return issue should be granted, and the parties should be allowed to file briefs and present oral argument, as hereinafter provided.

The Commission orders:

(A) The intermediate decision procedure hereby is omitted for purposes of determination of the proper rate of return for Tennessee.

(B) The Presiding Examiner is directed to certify to us the evidence of record on the issue of rate of return for determination of that issue under interim order procedure.

(C) Main briefs on the issue of the proper rate of return for Tennessee shall be filed and served by all parties who desire to do so, on or before July 15, 1960.

(D) Oral argument before the Commission shall be held on July 21, 1960 at 10:00 a.m. in a Hearing Room of the

Federal Power Commission, 441 G Street, N.W., Washington, D. C. (1) in lieu of reply briefs on the issue of the proper rate of return for Tennessee; and (2) on the questions whether as a result of determination of the proper rate of return, immediate refunds and rate deductions, if any, should be ordered, and if so, on what basis.

(E) All parties to this proceeding who desire to participate in the oral argument herein provided, shall notify the Secretary on or before July 11, 1960, of their intent to do so, indicating which items referred to in paragraph (D) above, they propose to argue and the amount of time they desire for such argument.

By the Commission.

JOSEPH H. GUTRIDE,
Secretary.

5297

(Docketed July 1, 1960)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck and Arthur Kline.

Docket Nos. G-11980, G-17166 and G-19983

TENNESSEE GAS TRANSMISSION COMPANY

Order Denying Motions

(Issued July 1, 1960)

On May 12, 1960, The Ohio Fuel Gas Company, The Manufacturers Light and Heat Company and United Fuel Gas Company (Columbia Companies), interveners in the above dockets, filed a joint motion requesting that we suspend the hearings in the proceeding in Docket No. G-19983

and relieve the Presiding Examiner of further duties until he is afforded an opportunity to issue an intermediate decision in Docket No. G-11980 on the allocation of costs to zones. In support thereof the Columbia Companies allege that the issues before the Presiding Examiner are substantial and require careful attention, and further, that if the allocation issue is decided many other issues in these dockets might be disposed of quickly by compromise and settlement.

It is our view that it would not be appropriate at this time to suspend the hearings in Docket No. G-19983. The Presiding Examiner is fully aware of the importance attached by the parties to the zone allocation issue and, without doubt, gave that matter full consideration in scheduling hearing sessions in Docket No. G-19983. We believe that the matter should be left to his discretion.

On May 23, 1960, the Consolidated Natural Gas System Companies[1] filed a motion in the proceeding in Docket No. G-11980 for an interim refund order therein. Generally stated, Consolidated requests that the Commission determine the rate of return and the depreciation rate issues in Docket No. G-11980 and that for purposes of determining refunds, both interim and ultimate, we apply the historical revenue level basis for allocation of costs to each of Tennessee's zones.

5298

Consolidated requests that we make these determinations on an interim basis, on the record as it stands in Docket No. G-11980, after reasonable opportunity for briefs and oral argument, and with the intermediate decision procedure omitted.

---

[1] This group of interveners is comprised of The East Ohio Gas Company, Hope Natural Gas Company, Lake Shore Pipe Line Co., New York State Natural Gas Corporation and the Peoples Natural Gas Company.

Answers in opposition to that motion were filed by Tennessee, the Columbia Companies, and the New England Interveners[2] and in support thereof by the City of Cleveland, Ohio, and the City of Pittsburgh, Pennsylvania.

It is our belief that the procedure proposed by Consolidated which contemplates interim determination of these issues on a record which is not yet complete, and will require further determinations at a later date, will result in delay and duplication. While we agree that the burden of increased rates being borne by Tennessee's customers should be alleviated to the extent warranted, as expeditiously as possible, we conclude that the determination of issues should be made herein only when the record on such issues is complete.

Upon consideration of the motions referred to above, the responses thereto, and the status of the designated proceedings, we find and conclude that both of the said motions should be denied.

The Commission orders:

The motions filed in the above-designated proceedings by the Columbia Companies on May 12, 1960, and by Consolidated in the proceeding in Docket No. G-11980 on May 23, 1960, hereby are denied.

By the Commission.

JOSEPH H. GUTRIDE,
Secretary.

---

[2] The 25 wholesale customers purchasing gas from Tennessee in the New England Zone.

5316

(Received July 19, 1960)

UNITED STATES OF AMERICA
BEFORE THE FEDERAL POWER COMMISSION

In the Matter of
TENNESSEE GAS TRANSMISSION COMPANY

Docket Nos. G-11980 and G-19983

Motion To Omit Intermediate Decision Procedure On Issue of Cost Allocation

In accordance with Section 1.30(c)(2) of the Commission's Rules of Practice and Procedure, Tennessee moves (1) for the omission of the intermediate decision on the issue of cost allocation now pending before the Presiding Examiner in Docket G-11980 and (2) that the issue of cost allocation be decided by the Commission simultaneously with the rate of return issue in Docket G-19983. In support hereof it is respectfully shown as follows:

I

The issue of cost allocation in Docket No. G-11980 has been thoroughly tried and briefed and is ripe for decision. The issue of rate of return in Docket G-19983 will be argued orally before the Commission on July 29, 1960 and will then also be ripe for decision.

II

Hearings on the issue of cost allocation were concluded on December 17, 1959. Reply briefs were filed on April 11, 1960. In view of

5317

this fact, Tennessee assumed that the Presiding Examiner's decision on this issue would be forthcoming in the

very near future. However, in the course of recent hearings in Docket G-19983, the Examiner observed that; due to the press of other matters, he has been unable to make any progress on his decision on the allocation issue. He estimated that his decision would not be forthcoming until about November 1960 (Tr. 2206).

III

In our Memorandum "In Opposition to Staff Motion for Interim Order," filed June 13, 1960 in Docket G-19983, we pointed out the importance of not requiring Tennessee to reduce rates on the basis of any interim order which might reduce Tennessee's claimed rate of return, until the issue of cost allocation was decided.

IV

In view of these facts and in view of the further fact that an early decision by the Commission on the issue of cost allocation may well serve to expedite the disposition of Tennessee's three pending rate cases (Dockets G-11980, G-17166 and G-19983), we respectfully urge the Commission to omit the intermediate decision procedure on the allocation issue and decide the allocation issue simultaneously with the rate of return issue in Docket G-19983. We are of the firm view that such procedure would serve the best interests of all concerned, and would also obviate the risks discussed in our aforementioned Memorandum "In Opposition to Staff Motion for Interim Order" which would result from any interim

5318

rate reduction order based only on the decision of the rate of return issue.

Respectfully submitted,

TENNESSEE GAS TRANSMISSION COMPANY
By /s/ HARRY S. LITTMAN
Its Attorney

William C. Braden, Jr.
B. J. Williamson
Tennessee Building
Houston 1, Texas

Harry S. Littman
Jack Werner
Harold L. Talisman
317 Wyatt Building
Washington 5, D. C.

Attorneys for Tennessee Gas Transmission Company

July 19, 1960.

* * * *

5370

(Docketed Aug. 5, 1960)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, Arthur Kline and Paul A. Sweeney.

TENNESSEE GAS TRANSMISSION COMPANY

Docket Nos. G-11980 and G-19983

Order Denying Motions

(Issued August 5, 1960)

On July 19, 1960, Tennessee Gas Transmission Company (Tennessee) filed a motion requesting (1) omission

of the intermediate decision on the issue of cost allocation pending before the Presiding Examiner in Docket No. G-11980, and (2) decision on that issue by the Commission simultaneously with decision on the rate of return issue in Docket No. G-19983. In support of its motion Tennessee alleges that early decision by the Commission on the cost allocation issue may serve to expedite disposition of Tennessee's three pending rate cases and would obviate risks that might result from an interim rate reduction based only on the decision of the rate of return issue.

On July 29, 1960, The Ohio Fuel Gas Company, The Manufacturers Light and Heat Company and United Fuel Gas Company (Columbia Companies), interveners in the above dockets, filed a cross-motion and answer to Tennessee's motion, referred to above. Columbia Companies in their answer urge denial of Tennessee's request for omission of the intermediate decision procedure on the cost allocation issue in G-11980, and in their counter-motion request that hearings in Docket No. G-19983 be suspended and the Presiding Examiner be relieved of all other duties until he has issued his decision on the cost allocation issue.

Answer and objection to Tennessee's motion was filed by the New England Interveners, comprised of the 25 wholesale customers purchasing gas from Tennessee in its New England Zone.

Hearings on the cost allocation issue, severed from the other issues in Docket No. G-11980 by Commission order, were concluded on December 17, 1959, and briefing thereon was concluded on April 11, 1960. Tennessee's motion for omission of the intermediate decision on that issue is neither timely nor concurred in by the other parties to the proceeding. Further, while we recognize that an early decision on that issue is desirable, the nature and consider-

able size of the record, indicates that it would be more practicable in the

interests of an early decision and in the interest of effective administration of the Natural Gas Act, that the Presiding Examiner, who has available knowledge of that record, should proceed with consideration of the evidence and render decision thereon.

The cross-motion filed by the Columbia Companies is substantially the same motion filed by these parties on May 12, 1960 and denied by our order issued July 1, 1960 in these dockets. The so-called cross-motion sets forth no basis for reversal of that order. Moreover, the present schedule of further hearings in Docket No. G-19980 appears to achieve the effect sought by that counter-motion.

Upon consideration of the above motions and the respons thereto we find and conclude that both of those motions should be denied.

The Commission orders:

The motion filed by Tennessee on July 19, 1960 and the cross-motion filed by Columbia Companies on July 29, 1960, in these dockets, hereby are denied.

By the Commission.

MICHAEL J. FARRELL,
Acting Secretary.

5372

(Docketed Aug. 19, 1960)

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck, Arthur Kline and Paul A. Sweeney.

TENNESSEE GAS TRANSMISSION COMPANY

Docket No. G-19983

Order Determining Rate of Return Disallowing Proposed Increased Rates and Directing Payment of Refunds and Permitting Substitution of Lower Interim Rates

(Issued August 9, 1960)

This proceeding arises from a filing on October 5, 1959, by Tennessee Gas Transmission Company (Tennessee) under Section 4(d) of the Natural Gas Act of proposed increased rates to its jurisdictional customers totaling $26,590,138 on an annual basis. These proposed increased rates were suspended by order of the Commission issued November 4, 1959, until April 5, 1960, and such further time as they might be made effective in the manner prescribed by Section 4(e) of the Act. Upon motion of Tennessee duly made, and by order of the Commission issued April 29, 1960, the proposed increased rates became effective as of April 5, 1960, subject to refund of any charges found by the Commission in this proceeding to be excessive.

Hearing on the lawfulness of Tennessee's proposed increased rates in this proceeding commenced on February 2, 1960. In the course of the hearing, Tennessee presented all of its direct evidence. This evidence was tested by cross-examination on the single issue of rate of return. Evidence on this single issue was also presented by the Commission's staff and by the West Virginia Public Serv-

ice Commission. This evidence was in turn the subject of cross-examination by Tennessee, and Tennessee thereafter presented rebuttal evidence on the issue of rate of return, the cross-examination of which was concluded on May 25, 1960. On that date Commission staff counsel moved that an interim order procedure be adopted with respect to the rate of return issue, requesting (1) that the Commission consider the record on rate of return and issue its order determining the fair, just and reasonable rate of return to be allowed Tennessee in this proceeding; and (2) that if the rate of return so determined is less than the 7 percent proposed by Tennessee, the Commission direct Tennessee to refund the difference between the rates collected at the proposed 7 percent and reduced rates giving effect to the rate of return so determined. Staff's motion contemplates that for the purpose of the immediate refund and the filing of substitute lower rates for the interim period, all other factors relating to rate base, cost of service, allocation, etc., be used as presented by Tennessee. Commission staff counsel also moved that the intermediate decision procedure be waived in accordance with Section 1.30 of the Commission's Rules of Practice and Procedure.

5373

By order issued June 17, 1960, the Commission omitted the intermediate decision procedure on the issue of rate of return and directed that oral argument before the Commission be heard on (1) the question of the proper rate of return for Tennessee and (2) the questions whether as a result of determination of the proper rate of return, immediate refunds and rate reductions, if any, should be ordered, and if so, on what basis. Oral argument by Tennessee, staff and interveners was heard on July 29, 1960, and these issues are now before the Commission for decision.

RATE OF RETURN

Tennessee proposes in this proceeding an overall rate of return on its net investment rate base of 7 percent. Staff, and those interveners who have taken a position on the rate of return issue, contend that this rate of return is not justified and that Tennessee has not shown the need for such a high rate of return. Staff's position is that the fair, just and proper rate of return for Tennessee is not in excess of 6⅛ percent, whereas those interveners who have addressed themselves to this issue take the position that Tennessee is entitled to no more than 6 percent, except for one intervener who would allow Tennessee 6¼ percent.

Based on the evidence of record, the parties' briefs, and the oral argument, we are of the opinion that 6⅛ percent is the fair, just and reasonable rate of return to be allowed Tennessee for the purpose of this interim order, and is in accord with the principles and standards set forth by the Supreme Court in *Bluefield Water Works and Improvement Co.* v. *Public Service Commission of West Virginia*, 262 U.S. 679, and in *F.P.C.* v. *Hope Natural Gas Co.*, 320 U.S. 591.

For the purpose of determining an overall rate of return, Tennessee utilizes capitalization ratios which purport to be based on the capital structure of Tennessee alone. Staff and the West Virginia Commission, on the other hand, presented their evidence and make their recommendations on the basis of Tennessee's consolidated capitalization. Use of a capitalization on a consolidated basis is also urged by certain of the interveners.

Tennessee, through its divisions and subsidiaries, is engaged in diversified activities, some of which are wholly unrelated to its gas transmission business. It carries on these activities both on this continent and overseas. Ten-

nessee's chairman testified in this proceeding that 30 percent of Tennessee's gross and net has come from unregulated activities. Tennessee's evidence shows a total capitalization on a consolidated basis of $1,297,861,544, as of February 29, 1960, as compared to a total capitalization on a non-consolidated basis, as of the same date, of $1,186,721,011. It further shows that of Tennessee's average net plant of $1,053,719,815, some 79 percent represents utility or gas plant, and some 21 percent represents non-utility plant. We note these data to show the extent to which Tennessee is engaged in activities

which are beyond the regulatory scope of this Commission, and to point up the problem with which we are faced in fixing rates to be paid by Tennessee's jurisdictional gas customers. The natural gas consumer should not be put in the position of either financing or underwriting Tennessee's non-jurisdictional business, and we are of the opinion that for the purpose of determining a proper rate of return to be allowed we should look to the capitalization of Tennessee's gas pipeline business rather than to either its consolidated capitalization or the capitalization of the company itself on a non-consolidated basis.

The record at the present time does not reveal what the capitalization of Tennessee's gas pipeline business might be. Tennessee has introduced in evidence what purports to be its capitalization on a non-consolidated basis, and we would be inclined to determine Tennessee's interim rate of return on that basis, but for the fact that the state of the record does not permit us to determine the completeness or accuracy of that statement in the absence of evidence showing the capital structure of the various subsidiaries of Tennessee. Thus, for the purpose of this interim order we shall utilize a capitalization determined on

a consolidated basis. It should be noted, however, that as a practical matter the rate of return which we herein determine to be proper would be the same whether we base our findings upon the consolidated capitalization set forth below, as we here do, or were to use as the basis of our findings the non-consolidated capitalization statement put in evidence by Tennessee. We emphasize, however, that the determination herein made is for the purpose of this interim order only and that such determination is subject to final review in the next phase of this proceeding in light of such additional evidence as shall be adduced upon resumption of the hearing to show Tennessee's capitalization insofar as it applies only to Tennessee's gas pipeline business. Tennessee, upon resumption of the hearing, shall present evidence for this purpose.

On a consolidated basis, we find Tennessee's capitalization, as of February 29, 1960, to be as follows:

Long term debt	$ 737,664,739	56.8
Preferred stock	177,782,266	13.7
Common equity	383,068,287	29.5
	$1,298,515,292	100.0%

In fixing these capitalization ratios, we have excluded from long term debt $18,494,427 of accumulated deferred taxes arising from the use of liberalized depreciation under Section 167 of the Internal Revenue Code of 1954, which staff contends is equivalent to a long term loan at zero interest. However, in so doing, we do not here decide the issue of the proper treatment of the deferred taxes, but rather reserve that question for disposition in the next phase of the proceeding, together with the question of the proper treatment of the tax benefits for statutory depletion and intangible well drilling costs.

We have treated the $19,264,600 of 4.50 percent convertible preferred stock, which as of February 29, 1960, had not been converted into equity, as preferred stock. We cannot agree with Tennessee that such stock should be reclassified in the capitalization as common equity. Although this stock is presently in the process of being converted, we cannot conclude that conversion of the balance outstanding is imminent. The $19,264,600 is therefore included in the amount of preferred stock shown in the above finding of capitalization. We have also included in the amount of preferred stock the premium received by Tennessee on five issues of preferred stock amounting to $653,748, which Tennessee concedes should be included and which does not appear to be included in the company's statement of consolidated capitalization.

There is no controversy concerning the average weighted cost of Tennessee's debt and preferred stock, and we accept the cost of 4.35 percent for debt and 4.90 percent for preferred stock as shown by Tennessee on a consolidated basis.

The heart of the controversy in this proceeding and the issue which is basic to a determination of the overall rate of return to be allowed Tennessee is the question of the allowance to be provided in the rate of return for Tennessee's common equity. This allowance takes into account the return which is required to attract equity capital into Tennessee's business. On the basis of the weighted average cost of debt capital and preferred stock of 4.35 percent and 4.90 percent respectively, and utilizing the capitalization ratios as determined above, the following

allowances on Tennessee's equity capital would be provided by allowing the overall rate of return as indicated:

Overall Return	Equity Allowance
6 percent	9.69 percent
6⅛ percent	10.12 percent
6¼ percent	10.54 percent
6½ percent	11.39 percent
6¾ percent	12.24 percent
7 percent	13.08 percent

In support of its proposed 7 percent rate of return, Tennessee contends that it has historically been allowed a return of 14-16 percent of its book equity, and that it now should be allowed the same return on book equity to maintain its relative position; that a 7 percent rate of return is necessary to maintain a proper coverage of its debt interest and preferred

dividends; and that Tennessee and other natural gas pipeline companies are entitled to a higher return on equity than electric companies which have historically received a return of close to 11 percent on a larger common equity base. Tennessee wholly rejects the use of earnings-price ratios as a measure of investor appraisal and as a guide to determinating the proper equity allowance, and relies instead on current earnings-book value ratios. Staff, on the other hand, utilizes earnings-price ratios as the best guide, to be considered with judgment and in balance with other factors, in determining the proper allowance for equity. The West Virginia Commission, in turn, derives an allowance for equity from a study of the dividends on Tennessee's common stock in relation to net proceeds, making appropriate adjustments for pay-out ratio and cost of issuance, etc.

We have only recently considered the question of the reliability of using earnings-price ratios in determining the proper allowance to be made for common equity in the rate of return for a natural gas pipeline company. In our order issued July 8, 1960, in *Southern Natural Gas Co.*, Docket No. G-20509, we confirmed the Commission's practice of using earnings-price ratios, with judgment, as an indication of a proper return on common equity. We stated:

> "The investor's appraisal of the risks inherent in the enterprise and the return which he requires in the light of this appraisal are basic to a determination of the allowance for common equity, and the Commission as a matter of practice has always looked to earnings-price ratios as an indication of such investor appraisal. We are of the opinion that the study of earnings-price ratios for Southern and comparable pipeline companies over a period of years, put in evidence in this proceeding by staff, may properly be used with judgment, together with other factors, in determining a reasonable allowance for Southern's equity."

The record in this proceeding shows that for the five year period, 1955-1959, the earnings-price ratios for Tennessee averaged 5.8 percent, and for the seven year period, 1953-1959, they averaged 6.2 percent. For ten major natural gas pipeline companies, comparable to Tennessee and including Tennessee, the earnings-price ratios for 1955-1959 averaged 6.3 percent, and for 1953-1959 they averaged 6.4 percent. Moreover, for the 12 year period, 1948-1959, for which such data is available for Tennessee, its earnings-price ratios averaged 6.6 percent and compare favorably with those of the other major pipeline companies, and are generally equal to or lower than those of the industry as a whole. Such data indicate that Tennessee enjoys a favorable and improving position in the money market in relation to the rest of the industry.

We should note at this point that the somewhat different approach to measuring investor appraisal of Tennessee's common stock which was utilized by the West Virginia Commission confirms and supports the

results of the earnings-price ratio study presented by staff. The evidence introduced on behalf of that commission indicates a "historical cost of equity capital" of 7.99 percent and a "current cost of equity capital" of 7.19 percent.

The record further shows that Tennessee has been able to maintain a high level of earnings while moving towards a more conservative equity ratio. It shows that there has been a substantial increase in the market price of its stock since 1946, reflecting the favorable position which its common stock enjoys in the market place. The record also shows that Tennessee has a relatively low risk in connection with the recovery of its cost of service by reasons of the minimum bill provisions of its rate schedules guaranteeing at least 69.5 percent of its estimated revenues from jurisdictional business. Tennessee's position is further strengthened by its rapidly increasing gas reserves, these reserves having increased 63 percent since 1950 as compared to an increase of 36 percent for the nation's reserves for the same period.

There is no sound basis for Tennessee's claim that it is entitled to the same return on book equity which it has historically enjoyed. To accept such a basis for the determination of a proper allowance for equity would be to deny recognition to changes in market prices, changes in dividend and earnings requirements of investors, changes in the relative risk of the natural gas industry as compared to other industries, and changes in relative risk of companies within the natural gas industry. This we cannot possibly do. We have, however, given consideration to the evidence

of the return on book equity of Tennessee as compared to the other major pipeline companies as a factor in fixing a return which is commensurate with returns on investments of other enterprises having corresponding risks, and such evidence confirms our conviction that Tennessee is entitled to no more than the return herein provided, and that its position in the industry will not be prejudiced by reason of the determination herein made of the proper rate of return.

In five previous rate proceedings before this Commission, the rate of return to Tennessee was not a matter of contest. In four of the cases there was agreement upon a rate of return of 6 percent, and the cases were settled without discussion of the rate of return or the allowance on common equity. In the fifth and last proceeding, Docket No. G-5259, the issue was heard and the examiner noted that the use of the proposed 6 percent rate of return would result in an allowance on common equity of 13.71 percent. He further noted that the staff had expressed some concern that the allowance on equity might be excessive, but had concluded that in view of the high interest rates then obtaining and the extremely thin common equity of Tennessee, a 6 percent rate of return should not be regarded as excessive. The examiner accepted the agreed upon 6 percent rate of return and his decision in that respect was adopted by the Commission (18 FPC 428). There is no substance in Tennessee's argument that the action of the Commission in accepting a 6 percent rate of return in the foregoing cases in some way gives it a vested right in the return on equity resulting therefrom. And it is clear from the evidence in this proceeding that the high return on equity which Tennessee here seek is not justified.

5378

Again there is no sound basis for Tennessee's position with respect to the coverage ratio for interest on debt and dividends on preferred stock. There is no substantial evi-